Exploring the Potential Disconnect in Agriculture between Industry Bodies and Farmers in their Sustainability Strategies and Priorities

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Master of Commerce in Marketing

by

Alexander Peter Holmes

Department of Management, Marketing and Entrepreneurship

College of Business and Law

University of Canterbury

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Abstract

The concepts of sustainability and environmental practices are investigated in the context of agriculture, in order to understand the impact of sustainability and the environmental challenges that farmers encounter in their business and their relationship with their industry bodies Beef + Lamb NZ and Dairy NZ. There has been significant work on sustainability and agriculture by authors such as MacLeod and Moller (2006), Yunlong and Smit (1994) and Pretty (2008). This is explored further with the utilisation of an exploratory qualitative approach. Semi-structured interviews were conducted with dairy, sheep and beef farmers in Canterbury, who were levy payers of the above organisations. The findings from these interviews were analysed thematically to produce findings not previously covered in this research area. Included in this is trust with and reactivity of the industry bodies, the possible disconnects present within the industry, and the importance of telling the farmer story to the general population and society. It appears that farmers undertook and had strong values towards sustainability and environmental practices. They understood the purpose of the industry bodies but often they did not utilise and interact with them as much as they could. A model around sustainability and environmental priorities in relation to the agriculture industry is contributed. This includes the themes that emerged that have influence on the research. As a result, limitations and areas that require further research, and a discussion of the findings concludes the chapters.

Keywords: sustainability, sustainable agriculture, environmental strategies, agriculture, dairy sector, sheep and beef sector

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Chapter 1: Introduction

1.1 Overview

This thesis aims to expand on the area of sustainability and marketing strategies within agriculture. Sustainability has an increased prominence in society with an expansion in the academic literature relating to marketing and sustainable development (Bridges & Wilhelm, 2008). There is a need to further understand the industry at a farmers' level, with a high level of focus being on organisations and the views of the general public rather than the farmers who are actually out in the field. The agriculture industry in New Zealand has a high level of visible presence to the general public and media, which gathers a lot of attention. Research conducted by Dairy NZ found that only 38% of New Zealanders agreed that farmers are committed to protecting the environment (Dairy NZ, 2013b). Previous literature in sustainable agriculture has often focused on different factors such as farming methods, resource use and environmental practices from a farming level rather than the industry bodies and their relationship with farmers (e.g., Lee, 2005; MacLeod & Moller, 2006; Smith & McDonald, 1998; Yunlong & Smit, 1994; Šūmane et al., 2018).

This study researches the potential disconnect between the industry and farmers in sustainability and marketing strategies. Environmental sustainability is very important in the agriculture industry in New Zealand. Half of the country's biodiversity is on sheep and beef farms and 47.9% of New Zealand's carbon emissions are caused from the agricultural sector which is higher than any other country and there are also high levels of contamination to some of the country's waterways (Beef + Lamb New Zealand Ltd, 2018d). This briefly highlights how sustainability and the environment are becoming a key focus in the industry.

Expanding on this, Dairy NZ found that environmental issues in the agriculture industry are starting to overtake economic concerns "Environmental and natural resource challenges as well as the perception of risk attached to climate change and natural disasters are overtaking economic concerns in the minds of global policy makers and business leaders. Voluntary sustainability frameworks, supported by performance measures and indicators, are being developed at an international and national industry level, reflecting corporate responsibility

goals and a desire to respond to consumer expectations about sustainable food" (Dairy NZ, 2017c, pp. 26-27).

Kotler (2011) broadly outlined sustainability, "Sustainably driven companies need to explain how they would revise their goals and operations to improve sustainability" (p. 133). Sustainable development is development that meets the needs of current generations without impacting the future generations' opportunity to meet their own needs (Sharma, Iyer, Mehrotra, & Krishnan, 2010). Sustainability in the industry and for farmers comes under corporate social responsibility (CSR). This is defined as where an organisation takes responsibility for their social, ethical, consumer, environmental and human right concerns that are present in society, incorporating it into their planning, operations and strategies (Bosch-Badia, Montllor-Serrats, & Tarrazon-Rodon, 2017). Sustainable marketing is defined as "Making intentional changes to an organisation's philosophy and values, as well as its products, processes or practices, to serve the specific purpose of creating and realising social and environmental value in addition to economic return (Adams, Jeanrenaud, Bessant, Denyer, & Overy, 2016, p. 180).

Kotler (2011) emphasised the need to see sustainability as leaving future generations the same or more resources than what we have currently and believes that this has to be done through an organisations research and development, production, financial and marketing practices. This study aims to decrease the gap in knowledge around sustainability and the disconnect in the industry. Through an investigation into the industry and communication with a selection of farmers, this research will provide insight into farmers and their interactions within the industry and the success of current strategies, finally giving further understanding into the current area of sustainability and its role in the industry.

Research has primarily been theoretical research that has focused more directly on the farmers and the surrounding communities rather than the larger organisations who market the products produced (e.g., MacLeod & Moller, 2006; Smith & McDonald, 1998; Šūmane et al., 2018). For this reason, a qualitative exploratory approach using semi-structured interviews was used for this study. Initially the study explores the background to the research and background into the agriculture industry in New Zealand. Briefly discussed is the industry bodies Beef + Lamb NZ and Dairy NZ, with further details on their practices and strategies discussed in depth in Chapter Two. These organisations are industry advocators and representatives for their

respective sectors. The researcher has interviewed stakeholders (Levy payers) of these organisations, farmers in the Canterbury Region of New Zealand.

1.2 Background of Research and the Agriculture Industry

From previous literature, there is a large amount of secondary research in strategic marketing and sustainability, with literature in agriculture primarily focusing on the farmers and the influencing factors and variables associated with the environment and farm practices. Because of the wide scope of this industry it isn't possible to focus solely on industry bodies. There is an opportunity to look into industry organisations and the key drivers and initiatives in their sustainable strategies. By interviewing farmers, the researcher hopes to find a potential disconnect between farmers and the industry bodies. Farmers have first-hand experience and knowledge of environmental and sustainable strategies and practices which are currently happening in New Zealand, those which are being forced upon farmers, and those which are not happening at all. Mitchell, Wooliscroft, and Higham (2010) believed there was a need for more proactive corporate marketing with a focus on ecological issues and believed that research using the sustainable marketing orientation matrix would help organisations monitor and change their marketing strategies. Lozano (2012) agreed with this, believing there is a need to better address the organisational systems (people, development and innovation). By interviewing farmers about the industry organisations the researcher hopes to gain insight into this. Having understanding and researching the advocate organisations and what they do can provide insight into sustainability in the sector, "Exploring company cases that have used a combination of the initiatives, and the results that these have yielded in regards to embedding sustainability" (p. 24).

With no universal framework, Kotler (2011) saw importance in analysing the factors and segments that are influencing sustainability. This can be done through using secondary data to analyse the corporate sector and by conducting primary research by communicating and discussing with farmers who are the industry stakeholders. López, Garcia, and Rodriguez (2007) agreed that more research into CSR and stakeholder satisfaction was needed, especially with the huge variation in sustainability between literature and different countries and cultures (Kotler, 2011). Mckenzie-Mohr (2000) believed that there was a gap in research when it came to behaviour change and fostering sustainable behaviour. This relates to the behaviour change

needed in the agriculture industry to not only partake in sustainable and environmental practices but also to make the public and society aware of what is actually being done. Ingenbleek and Meulenberg (2006) found that there was potential to further understand these practices and strategies in the industry by looking into research in other regions.

The agriculture industry is a vital industry in New Zealand with 45.3% of New Zealand's total land area being used for agriculture and horticulture. Recently, there has been a large increase in the dairy sector which in turn has led to a large decrease in sheep and beef stock numbers (not production) (Ministry for the Environment, 2016). Although stock numbers have decreased for sheep and beef farmers, revenue is actually up 11% (Beef + Lamb New Zealand Ltd, 2017c). As of 2016 there were 55,473 farm holdings over 14 million hectares in New Zealand with 44% primarily sheep and beef farmers and 21% mainly dairy farmers. There are 25,113 sheep and beef farmers over 9,328,000ha and 12,500 dairy farms over 2,415,000ha (Beef + Lamb New Zealand Ltd, 2017b).

Diversification and intensification has been present throughout the industry with 6.47 million dairy cattle, 27.37 million sheep and 3.61 million beef cattle. Beyond this there is also grain, vegetable, fruit and berry operations, forestry and other livestock properties in the country. The regional economy is reliant on the agriculture industry (Ministry for the Environment, 2017), with the Canterbury region having had an increase in the dairy sector. The majority of meat exports go to the European Union, North America and North Asia. In the dairy sector, New Zealand produces 3% of worldwide milk production, is the eighth largest milk producer and is the largest exporter of dairy products, exporting $13.4 billion (Dairy NZ, 2017f). We exported over $20.7 billion worth of pastoral products and over $3.3 billion worth of horticulture and arable products as of 2014 (Beef + Lamb New Zealand Ltd, 2017b). The agricultural industry holds large importance in terms of our economy and environment.

In the past, public perception of farming and protection of the environment has been volatile and varied (Dairy NZ, 2013b). In New Zealand, there is a high proportion of emissions and biodiversity relating and caused within and around the agriculture sector (Beef + Lamb New Zealand Ltd, 2018d). It is clear that environmental sustainability is extremely important and a constant issue for the industry. There has been increasing awareness with the agriculture industry and its environmental impact around such issues as water use and waterways, carbon

emissions and biodiversity (Beef + Lamb New Zealand Ltd, 2018d). Further discussion will follow in Chapter Two.

1.3 Description of the Research Process

As previously mentioned, an exploratory qualitative method of research was selected. This was to keep in line with the research intentions of this thesis and the nature of a large proportion of previous literature. The below research questions were developed to work towards the aim of providing insight into sustainability and marketing within agriculture.

1. How does sustainability influence the stakeholders' goals and planning?
2. What sustainable initiatives and strategies do you see being done as stakeholders of these organisations? Is there a disconnect?
3. What improvements do you see needed to improve your experience and livelihood business? How can these organisations provide and market this?
4. Does this lead to New Zealand being a leader in sustainability in the industry?

The intention of these questions is that they will help guide the research methodology and method choice to provide results which are insightful and descriptive.

Semi-structured interviews were conducted with thirteen participating farms, with eighteen farmers interviewed within these thirteen interviews. Six farms were levy payers of Beef + Lamb NZ and six farms were levy payers of Dairy NZ. On top of this, one farm was a levy payer to both organisations. This provides a diverse range of research from a range of farmers to gain different perspectives. After completion of the interviews and transcriptions, thematic analysis was utilised to find common areas and insights which were then grouped and compared. Chapter Four will cover the findings from this research and provide insight into the different themes of sustainability; environmental strategies and practices; relationship with industry body; public and sector relationship and disconnect, and the telling of the farmer story. From this there were also sub-themes produced which provided further insight into the disconnect and disparity within the agriculture industry in New Zealand.

1.4 Structure of the Thesis

The structure of this thesis is divided into five chapters. Below is an outline of these.

- Chapter One has introduced the topic of sustainable marketing and CSR and their relationship with the agriculture industry. It has also outlined background into key literature, insight into the agriculture industry and organisations in New Zealand and the key structure of the thesis.
- Chapter Two is an in-depth analysis and review of academic literature relating to the topic. This researches the key topics of sustainable marketing, strategic marketing, corporate marketing and sustainability, sustainable agriculture, agriculture marketing strategies and agriculture cooperatives. The review of this literature showed a clear gap with regard to the disconnect between the strategies and initiatives of industry organisations and what is perceived from farmers.
- Chapter Three outlines the methodology for this topic and the research process for the course of this thesis. This chapter includes ontological, epistemological and theoretical assumptions, research design, method, data analysis and quality and ethical considerations.
- Chapter Four discusses findings from the in-depth interviews in relation to the research questions and highlights themes that are perceived from the interviews by the researcher.
- Finally, Chapter Five discusses these themes from the findings and their relation to the reviewed literature. This chapter provides new insights and provides some scope for recommended further research and limitations that have been encountered.

Chapter 2: Literature Review

2.1 Introduction

Given the focus of Chapter One, Chapter Two focuses on literature relating to sustainability and the agriculture industry. In reviewing the literature, two key research areas were focussed upon. Firstly the literature related to marketing with its connection to sustainability; this was reviewed, in order to understand the scope of this area and to further understand the concept of sustainability and the triple bottom line, marketing strategies and corporate marketing in relation to sustainability and the environment. Secondly, the literature focused on agriculture and its relationship with not only sustainability and the environment, but also with marketing. This entailed research into sustainable agriculture, agricultural inputs and factors and agriculture cooperatives. With this study focusing on the agriculture industry in New Zealand, an understanding of the agriculture industry in relation to marketing, sustainability and cooperatives was needed. This literature provided insight into the practices, areas and studies conducted to further understand sustainable agriculture. The concept of triple bottom line (TBL) which comprises of environment, social and economic factors to sustainability has been implemented throughout literature. The researcher found a gap in literature in relation to agriculture and sustainability strategies and marketing.

Following these two areas, the researcher discusses the two agriculture industry bodies that are advocacy and support organisations for the dairy, sheep and beef sectors. These bodies, Dairy NZ, and Beef + Lamb NZ provided insight into the industry and the sustainability and environmental practices that were either present or being focused on in the industry. This provided valuable insight into the industry prior to interviewing participants regarding these industry advocacy bodies and the sector priorities in relation to the environment.

2.2 Marketing, Sustainability and Triple Bottom Line

This sections focuses on how sustainability has influenced marketing and how it has become a key issue in literature. The concept of Triple Bottom Line is also discussed as it relates heavily with the concept of sustainability. Since the 1990s, there has been a broad and expanding focus

in literature on marketing and sustainable development (Bridges & Wilhelm, 2008), with sustainable development focusing on meeting the needs of the current generation without impacting the needs of future generations, limiting resources and getting the most out of what is available (Bridges & Wilhelm, 2008; Gordon, Carrigan, & Hastings, 2011; Sharma et al., 2010). This is present along with the concept of Triple Bottom Line (TBL) which involves the environmental, social and economic factors relating to sustainability.

Belz and Peattie (2012) saw marketing strategy and sustainability as important and highly compatible concepts. Both look at a business and its want to thrive, survive and endure into the foreseeable future, with both having an external and future oriented focus. Further to this, Belz & Peattie (2012) see sustainability marketing as six key elements. These six elements consist of socio-ecological problems, consumer behaviour, sustainability marketing values and objectives, sustainability marketing strategies, sustainability marketing mix and sustainability marketing transformations. Although broad, these elements look at sustainable marketing externally and at a macro and micro level.

TBL is a universal tool that has been utilised in the sustainability literature (e.g.,Bosch-Badia et al., 2017; Bridges & Wilhelm, 2008; Mitchell et al., 2010). To analyse success in marketing strategies and projects, TBL has to be implemented and analysed, "needs to take into account all three dimensions of sustainable development" (Baumgartner, 2014, p. 269) which is expanded in Yunlong and Smit (1994) to be biophysical, socio-political and techno-economic (Figure 1). In regards to TBL, Bridges and Wilhelm (2008) see it as underlining sustainability. They found the negative impacts of TBL in underlining sustainability. This is due to the large economic focus perceived in achieving environmental sustainability. They see marketing as part of the problem with encouragement of consumption that leads to pollution, depletion of resources and unhealthy lifestyles. This in turn can lead to potentially jeopardising the viability of natural systems. Kotler (2011) relates to this where many marketing strategies are based on infinite resources, which is not true if we want the needs of future generations to be met, "It would be easy for this generation to use up more of our resource endowments and leave future generations with less, and this would be unconscionable" (p. 132). Bridges and Wilhelm (2008) agrees, where "Marketing has been perceived as part of the problem rather than the solution to society problems such as pollution, overconsumption, the depletion of natural resources, unhealthily lifestyles and human rights abuse" (p. 44). Marketing has huge influence on different industries with a balance between profit, globalisation and environmental

sustainability needed. Gordon et al. (2011) found that marketing currently focuses on selling more, overconsumption and profits which causes waste and pollution. Developing countries were the ones that were working on reducing emissions, materialisation and using green marketing.

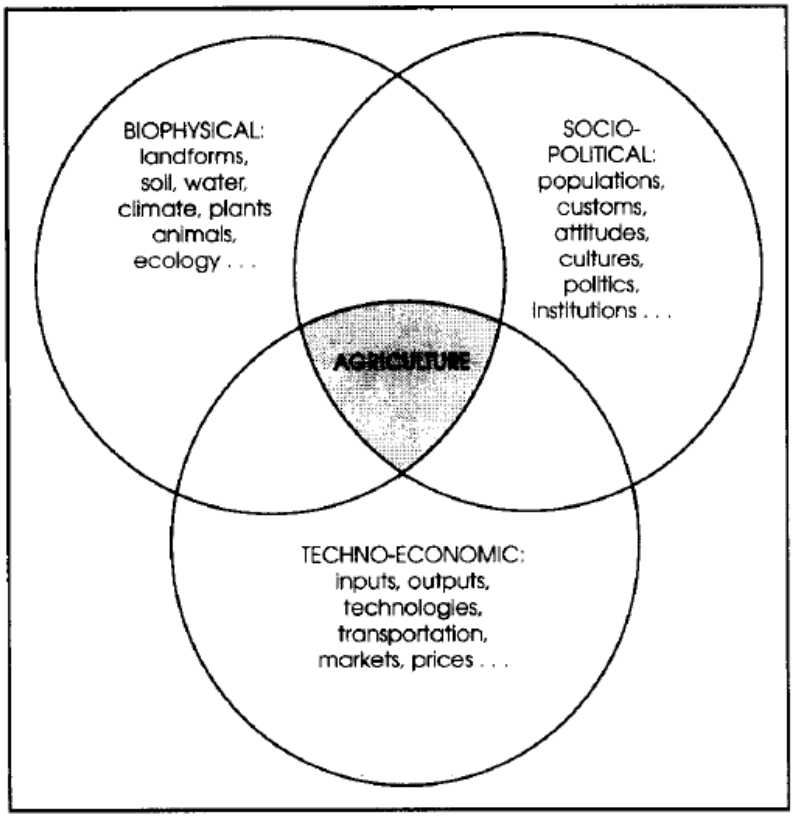

Figure 1: ***Environments within which Agriculture Operates (Yunlong & Smit, 1994, p. 301)***

TBL is important for sustainable marketing and sustainability in general. There is a need to look into the factors and variables that have a greater influence on sustainability and implementation of strategies. In this study, it provides further understanding on what influences sustainability in the agriculture, providing insight into what variables and factors have a greater impact and importance to the environment. Following on from sustainability and marketing and TBL, the next section focuses on how strategic marketing relates to sustainability. This is related to TBL where the right mix and use of bio-physical, socio-political and techno-economic factors can lead to competitive advantage and successful strategies being implemented. This relates heavily to the research, with the industry organisations creating and implement strategies to better the environment.

2.3 Strategic Marketing and Sustainability

Literature found that sustainable marketing relates heavily to the level that it is implemented, from internal, external to a sustainable worldview (Banerjee, 2001). Sharma et al. (2010) found that a huge amount of sustainability and environmentally responsible strategies were internal (focusing on reduction of over and reverse supply and internal marketing) rather than strategies that were visible to their consumers. Although this was financially beneficial, due to the lack of externality there is not as much of a strategic focus on sustainable development as there should be. Marketing strategies can be defined as "An organization's integrated pattern of decisions that specify its crucial choices concerning products, markets, marketing activities and marketing resources in the creation, communication and/or delivery of products that offer value to customers in exchanges with the organization and thereby enables the organization to achieve specific objectives" (Varadarajan, 2010, p. 119)

Sharma et al. (2010) implemented a framework that was focused around the internal processes and sustainable supply chain strategies which Kotler (2011) found vital. For sustainability driven organisations, all stakeholders including employees, suppliers and investors needed to be in agreeance, which leads to implementation of external strategies. While also focusing on the different stakeholders, Foerstl, Azadegan, Leppelt and Hartmann (2015) also found that sustainability and strategies have greater pressure from regulators, consumers, and non-government organisations (NGOs) for sustainable business processes.

Foerstl et al. (2015) showed that a wide range of sustainability practices were used to influence choices and effectiveness in businesses. Sustainability-oriented innovation (SOI) relates to sustainability and marketing, where it is "making intentional changes to an organisation's philosophy and values, and realising social and environmental value in addition to economic returns" (p, 180) (Adams et al., 2016). This framework is used to provide evidence of SOI practices and processes which would allow organisations to become more sustainable. The SOI model provided a greater understanding of sustainability in organisations, leading to strategies, innovative processes and in turn, an innovative organisation (Figure 2).

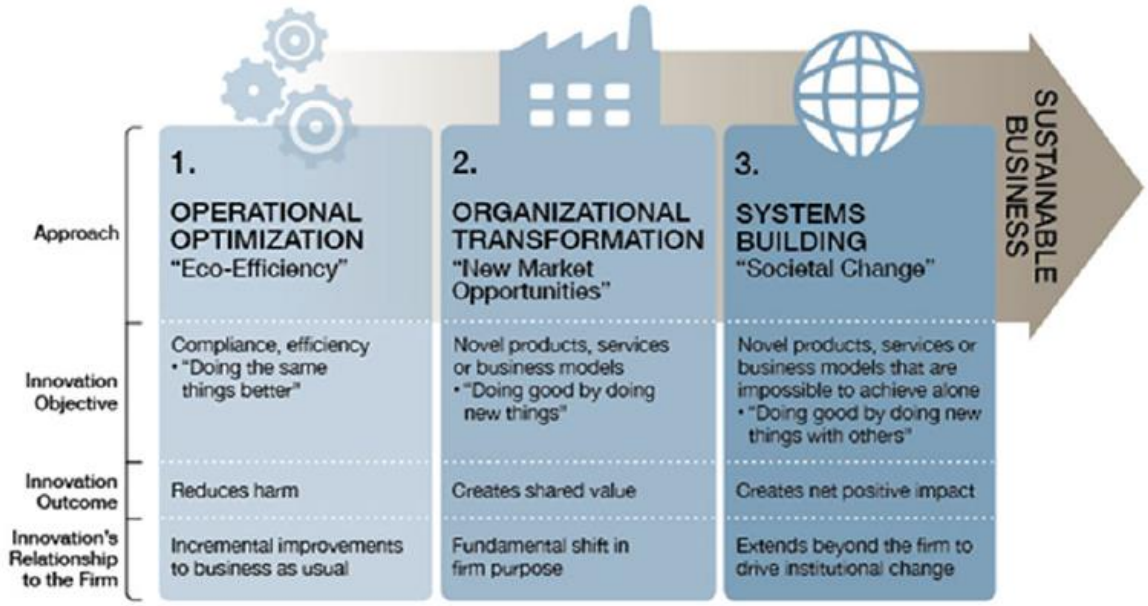

Figure 2: ***Model of Sustainability-Oriented Innovation (SOI) (Adams et al., 2016, p. 185)***

Bridges and Wilhelm (2008) looked at a 'sustainable worldview' or dominant external sustainability. This relates to how society reacts to sustainability and the degradation of the environment. This paradigm sees the importance of sustainable strategies being supported by not only individuals and businesses, but also government agencies and non-government organisations. Sustainable strategies are more successful if all parties are embracing the initiatives. Sharma et al. (2010) agreed with this, finding there was confusion over the leaders of environmental decision, whether it being consumers or businesses. Adams et al. (2016) emphasised the point that sustainability can not only be met by compliance in the organisation, but by believing that it had to be led by managers "the conditions for sustainability cannot be met simply by compliance, and that managerially led action is required" (p. 199). This is followed also by Foerstl et al. (2015), where it is found that sustainability is beyond that of consumers, NGOs, stakeholders and regulators, believing that the business itself at the upper level has to make the changes.

Maignan and Ferrell (2004) found that organisations needed to adjust their behaviours to attract stakeholders (especially through sustainability, ethics and societal pressure). Utilising word of mouth in marketing, implementing CSR into the supply chain and demarketing can help spread awareness towards consumers, which will hopefully lead consumers to buy from organisations that care about society and the planet. Following this, Sharma et al. (2010) and Kotler (2011)

found that business to business (B2B) organisations were away from consumer pressure but also found that marketing's role in the supply chain and environmentally responsible strategies were key drivers for firm success. Foerstl et al. (2015) also looked into B2B marketing and focused on the drivers of sustainability in the supply chain. Similar to Kotler (2011) and Sharma et al. (2010), it is found that sustainability in the supply chain has only recently become a focus, "most upstream suppliers rarely have direct contact with end consumers and are therefore rather indirectly affected by such regulations" (p. 68), with their brands, products and approach often under the radar, especially when their sustainability measures and approaches take more time.

Much past research has looked into the developed marketing mix (product, price, place and promotion) when developing and implementing sustainable strategies (Bridges & Wilhelm, 2008; Kotler, 2011; Lozano, 2012). By implementing sustainable strategies, Kotler (2011) found that changes would be needed. To be sustainable, initiatives such as product savings and advancement in sources, make up of material, energy use and physical supplies would be needed. Through sustainability, products and initiatives would likely be more expensive with the hope that consumers are willing to pay more for a sustainable and more responsible product. Organisations also need to look at where their products are produced, where the suppliers are located and the distance and mode of distribution. Sustainable strategies also involve implementing sustainable links and activations in their promotion (Kotler, 2011). Bridges and Wilhelm (2008) took a similar approach but emphasised the importance of product development and standards, costs of sustainable and ethical products, auditing and promotional ethics and effort.

Benchmarking and the Dow Jones Sustainability Index (DJSI) have been used to measure and understand the levels of sustainability. Benchmarking was used by Vorhies and Morgan (2005) where firms looked to identify the practices that produced better results in firms to increase their advantage. This empirical study also looked at the Organisational Learning Theory (OLT), where "Embedded learning represented in a firm's capabilities can constrain both the motivation and the ability to generate and respond to benchmarking insights" (p. 91) with OLT seeing benchmarking as somewhat a measurement for potential outcome. This can be incorporated into the research relating to sustainable marketing strategies.

The Normative Benchmarking Theory was used to understand performance benefits and marketing capabilities. In depth interviews and focus groups with resource and content analysis was used to understand performance and marketing orientation. This relates to Mitchell et al. (2010) where sustainable marketing orientation and macro marketing was used to interpret competitiveness, customers and strategic tactics. Bridges and Wilhelm (2008) also used DJSI, looking at the different practices and strategies of sustainable companies. Foerstl et al. (2015) provided a different practice, through the sustainable supply chain management (SSCM) practice "the strategic, transparent integration and achievement of an organisation's social, environmental and economic goals in the systematic coordination of key inter-organisational business processes for improving the long-term economic performance of the individual company and its suppliers (and customers)" (p. 68), which provided insight into the reasoning for supply chain management. This analysis of strategic marketing provides insight into the use of corporate marketing that is used by the industry bodies in the agriculture sector.

2.4 Corporate Marketing and Sustainability

With the industry bodies creating a range of strategies to better cater to their stakeholders and sector, there is a need to look into how corporate marketing is implemented at an industry body level. This highlights how large corporations have utilised sustainability within their businesses in past literature. There is a range of literature emerging relating to corporate behaviour with sustainability, ethics and society. Consumer perceptions and views are heavily influenced by company strategies. Banerjee (2001) summarised this "Environmental issues are becoming increasingly important in organisational theory and practice. Corporate environmentalism is emerging as a process of addressing environmental issues facing business firms" (p. 489).

Lozano (2012) took a critical approach through Grounded Theory and found "Corporate leaders and employees have been increasingly recognising their role in contributing to sustainability" (p. 14) with organisations perceived as being responsible for negative impacts. Lozano (2012) looked at CSR and the sixteen most influential initiatives which primarily looked at the environment from TBL, eco-labelling, cleaner production and zero emissions to environmental management systems. This relates to López et al. (2007) which analysed two groups of fifty five firms (one CSR initiatives, one not) and found that successful businesses had strategies and created value, and focused on management quality, environmental

management, brand reputation, corporate ethics and customer loyalty. Banerjee (2001) related to Lozano (2012) and López et al. (2007) by looking at the initiatives associated with sustainable strategies (e.g. cleaner technology, pollution prevention).

Gordon et al. (2011) developed a conceptual framework relating green, social and critical marketing. Green marketing looked at how to develop and market more sustainable products while also incorporating sustainability into the core business. Social marketing used marketing to encourage sustainable behaviour among consumers, businesses and stakeholders while critical marketing analysed and interpreted marketing theory, techniques and principles relating to critical methodology. This framework gave a broad and relevant understanding of the dimensions of sustainability and marketing, one that works well with other frameworks. It is important to break down the barriers to sustainable marketing that are implemented through the government, as well as the importance of consumer behaviour and individual influence (Gordon et al., 2011; Mckenzie-Mohr, 2000).

Bosch-Badia et al., (2017) analysed market efficiency and sustainability and how improved performance can come from sustainable projects. This links to Bridges and Wilhelm (2008), where the importance of implementing sustainable projects in with business marketing strategies is highlighted. Mitchell et al. (2010) looked into a sustainable marketing orientation model and found that it brought opportunities for marketing research through measurement and indicators of sustainable marketing, something that could be used in specific industries. The importance of this in literature came down to the long term initiatives. López et al. (2007) agreed, with value importance in strategies when internalising two different groups in relation to CSR. This relates to Luo and Bhattacharya (2009) where CSR and sustainability is vital for firm performance and long term growth "When implemented well, CSR programs and strategic marketing levers can create moral capital and provide insurance-like protection for the firm's shareholder wealth" (p. 210).

Stakeholder Theory (ST) was a theoretical approach that was used heavily throughout literature. Polonsky (1995) defined ST as where organisations take into account every individual and group that is influenced or affected by the organisation, their business accomplishments, and their purpose. This can be from affiliation through a legal situation, interest in their economic growth or an investor in the organisation. This relates heavily to the

research. Bosch-Badia et al. (2017) took a qualitative approach, using ST and the Efficient Market Theory (being impossible to beat the market). Variables were used including strategy, risk, value creation and performance in CSR projects. Baumgartner (2014) looked at ST and management with a mixed methods approach (qualitative factors with a quantitative evaluation). An integrated framework was created on CSR and management, offering "An integrated view on the relevance of sustainability aspects for an individual company and enables the integration of these sustainable aspects on different management levels" (p. 258). This looked at the different strategies for different management and the risks associated through a categorical framework. Banerjee (2001) implemented ST using a qualitative approach, finding that environmentalism arises due to the interests of stakeholders, but found that it was limited in corporate strategies because of poor organisation. This highlights the importance of stakeholders within the agriculture industry being forward thinking and proactive in relation to the environment and sustainability. If farmers are proactive and pushing for change then the industry bodies and other larger organisations will feel pressured to follow. This leads to the next section, relating how being sustainable can have a positive impact on the agriculture industry.

2.5 Sustainable Agriculture

Sustainability is becoming more of an issue in the agriculture industry in New Zealand (Beef + Lamb New Zealand Ltd, 2018d). Sustainable Agriculture is the focus of this research, looking into how it is present within the industry. There has been a range of definitions relating to agriculture and sustainability, with literature providing a range of views. Sustainability from an agriculture perspective has been a contested concept. Some see it as persistence for something to continue for a long time while others see it as resilience and the ability to come back after unforeseen circumstances (Pretty, 1995). Pretty (2008) found that agriculture systems harm has increased on the environment, with 11% more land used since the 1960s. Expanding on this, there has been an increased use of irrigation, machines and consumption of fertilisers and pesticides. Although this is somewhat in line with global population, on average, an individual eats 25% more than the 1960's (Pretty, 2008).

Sustainable agriculture has been defined as "The use of farming practices which maintain or improve the natural resource base of agriculture, and any parts of the environment influenced

by agriculture" (MacLeod & Moller, 2006, p. 202) with Pretty (1995) finding that beyond this, more technology and practices need to be implemented with professionals and institutions needing to listen more to farmer and stakeholder needs. Pretty (2008) defines sustainable agriculture as "the need to develop technologies and practices that do not have adverse effects on environmental goods and services, are accessible and effective for farmers, and lead to improvements in food productivity" (p. 447). Van Cauwenbergh et al. (2007) sees it as "the management and utilisation of the agricultural ecosystem in a way that maintains its biological diversity, productivity, regeneration, capacity, vitality, and ability to function, so that it can fulfil – today and in the future – significant ecological, economic and social functions at the local, national and global levels and does not hard other ecosystems" (p. 229-30). Lee (2005) relates to this by discussing five attributes of sustainable agriculture. These are resource conserving, technically appropriate, environmentally non-degrading, and socially and economically acceptable.

Macleod and Moller (2006) see that "sustainability also requires that agriculture is profitable; that the quality and safety of the food, fibre and other agriculture products are maintained; and that people and communities are able to provide for their social and cultural wellbeing" (p. 202). This is in line with Yunlong and Smit (1994) where "The use of resources to produce food and fibre in such a way that the natural resource base is not damaged, and that the basic needs of producers and consumers can be met over the long term" (p. 299). It is clear that agriculture involves many complex processes in relation to sustainability and the biophysical, socio-political and techno-economic framework. Smith and McDonald (1998) see sustainable agriculture biophysically as being heavily influenced on plant growth, management practices and the different conditions of the environment. Economically, farming is an enterprise that has significant national economic importance, with emphasis on the costs and future economic viability. Finally, socially it is seen as satisfying food and fibre needs globally to communities and the continued fairness, technology, quality and security. Horrigan, Lawrence, and Walker (2002) highlights that unsustainability in agriculture has been present for a long time, with natural resources eroding faster than regeneration. Horrigan et al. (2002) see sustainable agriculture as long term rather than short term, wanting farming systems that decrease or eliminate environmental harm from the agriculture industry. Research has shown that the likes of crop rotation, no/low-till farming, soil and nutrient management and rotational grazing are methods that can help agriculture sustainability, factors that industry leaders need to take into account.

Pretty (1995) and Yunlong and Smit (1994) both looked at intensification and the importance of regeneration in sustainability and agriculture. Pretty (1995) found there had been lots of past research into increased production and intensification and found that there is a need for better use of internal resources. With farmers using resource-conserving technology, and there being a demand to partner with other stakeholders and organisations it is obvious that technology is not the problem but the learning and the processes are; "Technologies are not sustainable, what needs to be made sustainable is the process of innovation itself" (p. 1249). Yunlong and Smit (1994) agreed with this, and found that this could be combatted at a farm level through support with management practices and adaptation of sustainable agriculture to be simpler or on a local/culturally relatable scale, leading to reduction in environmental impact. Garnett et al. (2013) also saw sustainable intensification (SI) as a key issue in agriculture, finding that food security was becoming dominant with increased competition for land and resource along with food security having huge potential to impact climate change. Their SI approach was found to focus on the need to increase production, believing it had to be done through higher yield rather than land increase (as that decreases conservation). An issue found in literature was that priorities for sustainability had been set, but there was little consensus on how it can be obtained with many factors having to be taken into account such as land use, human nutrition, rural economies, animal welfare and sustainable development. This is followed by "SI is only part of what is needed to improve food system sustainability and is by no means synonymous with food security" (p. 34).

In looking into sustainable agriculture, Pretty (2008) provided valuable insight into ways to improve the agriculture industry, "successful agricultural sustainability initiatives and projects arise from shifts in the factors of agricultural production" (p. 451). Agriculture is unique in the sense that its sector directly impacts its assets, making it complicated when wanting to move to a sustainable approach. With only a small proportion of farming using resource-conserving practices and technologies, there are improvements that can be made. The key areas of sustainability that Pretty (2008) found needed a greater focus was the integration of biological and ecological processes in food production, minimising the use of non-renewable resources, utilising the knowledge and skills of farmers and utilising the collective capabilities of the industry to work together to work on the issue. Pretty (2008) states "if technology works to improve productivity for farmers and does not cause undue harm to the environment then it is likely to have sustainability benefits" (p. 451).

Von Wirén-Lehr (2001) looked into the relation between farmers and managers was used through a four-step goals strategy to help with sustainability. Each step in the goals strategy looks into normative (TBL), spatial (local, regional, national) and temporal (long or short term) variables in sustainable agriculture practices. They relate it in a way that the framework can be transferred from a theoretical perspective to an agriculture one. This has been done to hopefully close the gap of sustainability practices in agriculture, to help find industry priorities and the best target groups. Van Cauwenbergh et al. (2007) went into greater detail of TBL and different indicators, expanding it in a way that related to agriculture and sustainability. Environmentally the focus was on air, soil, water, energy and biodiversity which contributed to the creation of a framework for sustainability assessment of agriculture systems. Beyond the TBL of sustainability, it also looked at different levels of spatial variables in agriculture and assessment tools to help understand agriculture production systems, techniques and policies. This hierarchical framework has allowed improvement on past weaknesses in frameworks, giving greater coverage of sustainability issues, factors and processes.

Pretty (1995) found that positivism had been dominant in past literature, where research looked into finding the nature of truth and reality around knowledge and science. Although it was successful, issues arose due to the way farming technologies were applied on a global scale. Pretty (1995) found that the positivist view was limiting due to it not analysing all the data available. This led to the social and professionally constructed methods where measurement and data collection was done effectively to meet farmers and stakeholders' individual needs "what each of us knows and believes is a function of our own unique contexts and pasts" (p. 1250). Due to huge variation in sustainability definitions, this has led to the constructivist view with different people (professionals, farmers, public). This shows that multiple interpretation perspectives have led towards a move away from positivism. Šūmane et al. (2018) took a constructivist approach by looking at eleven different farming practices using a theoretical framework of eleven different countries in Europe. Constructivism was used due to the different knowledges that are developed by people in their individual locations, learning sustainable agriculture through many different views. This is emphasised where it is discussed that the transition to sustainable agriculture requires a new knowledge base.

Yunlong and Smit (1994) also used a multidimensional constructivist framework with different viewpoints in agriculture, looking into the agricultural systems with different spatial scales and biophysical, socio-political and techno-economic factors. To complement this, Šūmane et al.

(2018) discussed the different forms of learning and knowledge. These are formal (industry and academia) and informal (farmers, public experiences, word of mouth and knowledge exchange) which is something important to note in this industry. With the scientific influence and present methods of knowledge, von Wirén-Lehr (2001) argued that the complex theoretical approach around sustainability could be implemented in the agricultural sector. This leads onto the different agricultural inputs and factors that are related to providing a more sustainable position for farmers.

2.6 Agricultural Inputs and Factors

Primarily, literature relating to agriculture and sustainability looked at the different factors and inputs that farmers, governments and the industry bodies implement to be more sustainable and improve the environment. These factors and influences include farming methods, intensification, resource use and environmental initiatives. These are often the factors that are at a farming level rather than ones at a governing body and larger nation and multinational organisation level (e.g., Lee, 2005; MacLeod & Moller, 2006; Smith & McDonald, 1998; Yunlong & Smit, 1994; Šūmane et al., 2018).

Lee (2005) looked into the agricultural inputs and their efficiency. There was a need for information and awareness around the key factors influencing the adoption of sustainable technology and resource management. Extending management and analytical skills can help to improve farming practices such as organic farming, soil management and irrigation. Lee (2005) believed that research and information needs to move away from the actual innovation and more towards the social learning processes and skill development. By implementing this information and behaviour, it will likely decrease risk, increase the networks with institutions and the public and also bring economic prosperity. This relates with Smith and McDonald (1998) where sustainable development and planning is vital at a farmers' level. Food sufficiency, (maximise food production), stewardship (controlling environmental damage) and community (maintaining or restructuring economic/social rural systems) were discussed in association with resilience. Indicators used here included field (soil and water conservation, crops) and farm (awareness, satisfaction of needs). Horrigan et al. (2002) also looked at this, emphasising how industrial agriculture had potentially impacted sustainable agriculture through the likes of monoculture, pesticides, fertiliser, soil erosion and water use. Beyond this,

they believe there are issues in sustainable agriculture due to consumption of renewable resources and the rate or use of renewable resources. They believe "the health of both the environment and humans would be enhanced if more of our farms made the transition to sustainable systems of production" (Horrigan et al., 2002, p. 446), which could be done if marketing directed emphasis towards decreasing distance of farm to plate. Horrigan et al. (2002) provided insight into the factors that heavily influenced sustainable agriculture, beyond this they highlighted the importance of these factors and ways that they could be more sustainably produced.

MacLeod and Moller (2006) did not focus on the different factors specifically, looking instead at the farming level through land use and the intensification that has occurred in New Zealand. There has been extensive literature on intensive farming and land use. New Zealand agriculture has been interpreted in five stages: colonisation, expansion, early expansion, early intensification, diversification (e.g. increase in dairy industry) and intensification (Macleod & Moller, 2006). Indicators used in terms of land use include stock, yield, and agricultural inputs (e.g. fertiliser). At this rate, risk to the environment and resource use is likely to continue into the future.

Pretty (2008) found that a lack of information and management skillset seemed to be a barrier to sustainable agriculture, with organisations and the industry hopefully being the driving force behind potential improvement, Morton (2007) also related to this. From reviewed literature, there was little research into 'code of conduct' or industry organisations in agriculture and sustainability. This relates to Morton (2007) as those organisations are the ones that are going to help change consumer and stakeholder perceptions around farming practices. Case studies were used to look at the marketing strategies that were prominent around agriculture and sustainability. These organisations are the ones who pick up the slack from governments, to not only help farmers but also implement strategies and management that will help consumer perceptions. They are "A nongovernmental organisation that develops one or more formal statements of rules of conduct regarding environmental and/or social domains of sustainable agriculture that producers voluntarily agree to implement" (Ingenbleek & Meulenberg, 2006, p. 453). Horrigan et al. (2002) agreed with this, finding that government programs and research are some of the big players needed in helping to adopt sustainable agriculture. With the mind-set of managers and supportive communities needed for sustainable agriculture to occur,

research and the industry needs to move away from the idea of what is best for the industry and what is best for farmers and move towards a balance of what is also best for the environment.

Some literature provided valuable insight into this study, primarily Maloni and Brown (2006) and Ingenbleek and Meulenberg (2006). Maloni and Brown (2006) found the importance of sustainability and CSR in the supply chain and developed a framework that could be implemented at different supply chain levels. They summarised environmental issues likely relating to this study including water and soil degradation, global warming and methane, chemical use and farming techniques. Morton (2007) also focused on the farming environment and the impacts that climate has on agriculture. The importance of marketing towards the public to truly understand what farmers are going through was emphasised. This leads to Ingenbleek and Meulenberg (2006) and their research.

Macleod and Moller (2006) looked into the key drivers of land use at a farming level by using annual data for 48 agricultural variables which was analysed, looking at the relationships between the variables and industry trends. Maloni and Brown (2006) explored sustainability and CSR, most notably biotechnology, environment, animal welfare and fair trade, while they also had an emphasis on water and soil damage and global warming which relates to this research. Šūmane et al. (2018) looked at different agriculture development pathways. Researching how there is a need to transition to more sustainable agriculture and the range of new knowledge needed. Smith and McDonald looked into sustainability and the different factors that can impact this in agriculture. This includes agronomic productivity, energy input, carbon efflux, water quality, soil degradation and time. These are seen as factors that relate to this research and how these factors can impact environmental sustainability in agriculture. In the past. indicators have been used in different contexts: being the life cycle assessment (LCA), cost-benefit analysis (CBA), environmental impact assessment (EIA) and sustainability standards with principles, criteria and indicators (PC&I) (Van Cauwenbergh et al., 2007).

Ingenbleek and Meulenberg (2006) and Smith and McDonald (1998) took approaches that will potentially integrate well into this study. Ingenbleek and Meulenberg (2006) used a case study of 10 different code of conduct firms. They gained resources using document analysis and semi-structured interviews with experts and those directly involved in environmental strategies within companies. There has been little research into this type of company and sustainability. They created a topic list regarding ways that sustainable agriculture can occur (from fair trade

to organic farming). This study was likely successful due to the requirements of participation, where organisations had to offer different strategies within a diverse range of agricultural firms. They had to be large companies and be accessible for full research (in this case the Netherlands). Smith and McDonald (1998) looked into development planning and land use within agriculture. It was found that qualitative and quantitative methods had been used in the past which gave different sustainability indicators. Different measures to understand sustainable agriculture were used, including spatial attributes, and evaluation of sustainability in farming systems. This links to the next section as it highlights the importance of agricultural cooperatives and organisations in achieving sustainability and better environmental practices in agriculture.

2.7 Agriculture and Marketing Cooperatives

From literature reviewed, it was found that there was an emphasis put on agriculture cooperatives and collectives (Barham & Chitemi, 2009; Bernard & Spielman, 2009; Fischer & Qaim, 2012; Giesen, Soboh, Lansink, & van Dijk, 2009; Wollni & Zeller, 2007). This was important for this research topic as it provided insight into how larger agricultural organisations work within and for the agriculture industry. It also provides insight into the importance of having organisations at the forefront of the agriculture sector. Although in this research the organisations are not specifically cooperatives, they are industry advocate organisations that are funded by levy paying farmers. Some literature also provided insight into cooperatives and sustainability. There was a strong case study focus on Kenya, Costa Rica, Tanzania and Ethiopia dominant among the cooperative literature. Households and organisations in the same regions were sampled (Fischer & Qaim, 2012; Wollni & Zeller, 2007), with Fischer & Qaim (2012) focusing on questionnaires and interviews, which was in line with Bernard & Spielman (2009). Although a similar method was used, Barham and Chitemi (2009) provided a conceptual model of 34 different groups and used Marketing Performance Ratings (MPR).

MacRae, Henning, and Hill (1993) focused on marketing and agriculture, although not solely on co-operatives; a case study was used which was similar to what was done with other literature. Beyond this, cooperatives and collectives are likely to relate to marketing due to their presence and dominance in public environments. MacRae et al. (1993) found that past literature focused on potential strategies that can be used to overcome barriers relating to

sustainable agriculture. It was found that there has been limited marketing strategies due to lack of conceptual frameworks. MacRae et al. (1993) found that better strategies were needed, especially around sustainability and food production, processing and distribution. This could be done through new farming techniques, products from sustainable approaches, and public awareness of corporate sensitivity to environmental and social problems. In terms of implementing successful marketing strategies, industry leaders have often been a barrier "activities of large agribusiness firms have been implicated as significant obstacles to a successful transition to sustainable agriculture" (p. 22), with findings showing that firms are manipulating consumers so that they are able to ensure a predictable demand.

A framework was created by MacRae et al. (1993) which identified the importance of short, medium and long term strategies in corporate greening, ethical investment, changing organisation legal status, new business forms and development of ecological economies. It was found that there was a disconnect between a firm's activities and their goals around agriculture and sustainability (and nourishment and human development and fulfillment). Corporate greening was found to play a part in marketing agriculture "manifested in the changing product lines of existing forms, and in the appearance of new firms selling more environmentally benign products" (p. 31). Beyond this, MacRae et al. (1993) discussed how marketing boards and cooperatives, ethical investment, and change in regulations in corporations can heavily influence strategies "efficiency and substitution strategies would not likely produce the changes necessary to create sustainable systems" (p. 38). This highlights the need for alternative business forms that will help reach sustainability goals and ecological and economic strategies and concepts to help industry competition.

With a large focus on agriculture cooperatives and marketing, it is clear that cooperatives have a dominant part to play in agriculture and marketing. Giesen et al. (2009) found that cooperatives are being successful if the service provided to their members was better than what could be achieved individually, while not only offering stability, but also ideal growth conditions. Cooperatives are defined as "a user-owned and user-controlled organisation that aims to benefit its members" (p. 447). Beyond this, they offer their members different services such as credit, market development and technical help (Wollni & Zeller, 2007). It was found that firms have different types of members in terms of characteristics, objectives and cost structure. Cooperatives are generally inclusive but research shows that wealthier households are more likely to join (Fischer & Qaim, 2012), which is also found in Bernard and Spielman

(2009), where poorer farmers are less likely to participate, even though the cooperatives may provide them with benefits.

Past literature into marketing and cooperatives has been broad. Giesen et al. (2009) found that the dairy industry had been largely studied, with research also looking into how cooperatives help to decrease high transaction costs such as increasing production and marketing "The promotion of farmer organisations through outside assistance has recently re-gained popularity in the context of the agri-food system transformation" (p. 1255). Barham and Chitemi (2009) and Bernard and Spielman (2009) highlighted the prominence of smallholder and small scale agriculture in cooperatives and marketing. Bernard and Spielman (2009) also found that small scale farmers and commercialisation leads to potential high productivity, specialisation and higher income, believing that market participation is needed for cooperatives and the industry to be effective. Beyond this, they see cooperatives and industry organisations important to help improve food security, reduce poverty and help with agriculture development and economy-wide growth. Giesen et al. (2009), also highlighted importance of agricultural marketing on economic growth.

Bernard and Spielman (2009) emphasised importance towards smallholder farmers and potential challenges that they have due to lack of support, especially when these farmers are the majority of the people in the agriculture sector and need to be consulted before agriculture development should occur "the major obstacle facing smallholder-led agriculture growth is lack of market access, which proponents content, will lead to increased incomes and food security, more rural employment, and sustained agriculture growth" (p. 53). Wollni and Zeller (2007) believe that cooperatives help the agriculture industry by reducing costs and gathering valuable information, pointing out "that institutions such as cooperatives can substantially reduce the cost of information gathering. In this regard, cooperatives can play an important role in enabling farmers to access specialised markets" (p. 244), while also helping farmers increase their production and to apply certain quality and industry standards.

Researched literature provided many insights into marketing and generally agriculture cooperatives and how they can work with and support farmers in the agriculture sector. A focus on membership and involvement in agriculture cooperatives was done (Bernard & Spielman, 2009; Fischer & Qaim, 2012) with Fischer and Qaim (2012) proving insight into what determines joining and becoming a member and the potential impacts on marketing because of

these memberships. Fischer and Qaim (2012) found that collective marketing was used, where external transaction costs were reduced by exploiting economies of scale. Wollni and Zeller (2007) highlighted the positive impact present when participating in marketing cooperatives, seeing them as organisations that provide industry consistency and quality enhancements, "membership in cooperatives increases the probability that a household participates in specialty markets by 24%" (p. 246).

Bernard and Spielman (2009) provided relevance, finding a relationship between marketing performance and inclusiveness. Results showed that 89.59% of respondents felt there were benefits from joining. This research highlights the importance of membership. Especially the ones that provide benefits and represent the interests of poorer households. Barham and Chitemi (2009) contributed to the area through identifying underlying factors that allowed farmers and agriculture producers to help improve their market situation, with nineteen out of thirty four groups (56%) finding improvement.

Bernard and Spielman (2009) found that cooperative decision making was primarily with management committees that are less inclusive of farmer input, which shows a potential disconnect between farmers and the industry organisations. A 2/3 trade off model was provided where generally only two out of three factors could occur, being inclusive membership, participatory decision making and marketing performance. This literature shows that cooperatives often struggled to support poor households due to performance, which is potentially party due to the management decisions "Decision making tends to be concentrated in management committees that are less inclusive of the poorest members of the organisation" (p. 67). Fischer and Qaim (2012) related to this, looking into the factors that influenced the probability of joining a cooperative. Although there were many factors, the primary findings showed that land holdings, property title, household size and employment were dominant. Further to this, Barham and Chitemi (2009) found many conditions relating to cooperatives: these include cooperative size, cooperative boundaries, shared norms, past successful experiences, leadership and interdependence among group members. They also found that it was not uncommon or a significant factor to be a member of other groups. A reliable water source, activity level and type of commodity, group maturity and partner agencies were factors that were important for farmers and cooperatives, and most likely to improve their market situation.

From literature, many benefits of cooperatives were found. Fischer and Qaim (2012) found that cooperatives can help develop programs that can combat market failures and help the smaller farmer sector, while also providing a means to help further the agriculture sector "farmer organisations can function as important catalysts for innovation adoption and upgrading of production systems through promoting efficient information flows" (p. 1267). Beyond this, Fischer and Qaim (2012) saw that groups were generally inclusive of poor farmers, although land ownership, other agriculture assets and credit access were factors that increased joining probability.

Highlighted was the importance of partnerships and collaborations "the establishment and sustainability of farmer organisations is often conditioned on external support, for example by NGOs, government agencies, or private businesses" (p. 1256), which is also highlighted in Barham and Chitemi (2009). An existing issue with cooperatives and collective action is that it is the farmers with greater capacity to implement innovation and gather information who are more likely to get involved, which likely increases household income, but only for those farmers, not the poorer and potentially less collective farmers (Fischer & Qaim, 2012). Wollni and Zeller (2007) also highlighted the importance of cooperatives "Cooperatives an play an important role in providing farmers with these services and in helping them to adjust to the new requirements of the market" (p. 247-8)

Bernard and Spielman (2009) believed that cooperatives were highly beneficial due to their inclusive nature that they are meant to have. The benefits they believe they should provide are services that are beneficial and essential to rural farms and households, joining criteria that allows for any interested household to join, and a management and governance structure that encourages farmers and rural households to participate in decision making. Barham and Chitemi (2009) provided alternative insight into benefits of cooperatives, this was through the entrepreneurial culture in agriculture, where they found a move from production to market orientation needing. From this, there was pressure on the institutions of collective action which highlights the importance of keeping cooperatives in line and making sure that they are doing what is right. Barham and Chitemi (2009) believed that there needs to be a high level of trust between members, more altruistic behaviour and more collaboration and connections to organisations and people within and outside their primary community. Beyond this it was perceived that farming groups and cooperatives would improve their marketing positions if they had less poverty, smaller group size and past successful experiences, which is in line with

other literature. The final sector of this chapter provides insight into the focal industry bodies of this study: Dairy NZ of the dairy farming industry and Beef + Lamb NZ of the sheep and beef farming industry.

2.8 Industry Bodies

Below is a discussion around the industry bodies, Dairy NZ and Beef + Lamb NZ. This discusses a range of strategies and initiatives that the bodies are involved in and provides a more in depth understanding of what they do. Both of these organisations are levy funded by farmers. These two organisations are examined specifically as they are the industry advocate and support organisations for the two largest sectors in the agriculture industry in New Zealand. As they are levy funded by farmers, they are owned by farmers in New Zealand and seen as being a positive influence in the industry. By analysing these organisations, there is the opportunity to understand whether what they are doing and say they are doing line up with the needs of farmers in terms of sustainability and the environment.

2.8.1 Dairy NZ

Dairy NZ is an organisation that advocates and works with dairy farmers and other stakeholders within the dairy sector. Dairy farmers in New Zealand pay a levy towards Dairy NZ, who then allocate it to a range of initiatives such as advocacy, research, investment and education within the sector. At the end of the financial year in 2017 there was $67 million in levy payment (Dairy NZ, 2017a). In the past only 4% of this has been used towards environmental stewardship, but due to changes in societal view and the industry, $10.6 million is being used towards environmental work in the next year. Dairy NZ has defined environmental stewardship as "responsible use and protection of the natural environment through sustainable practices and conservation. With use of resources means using them sustainably for the greater good" (Dairy NZ, 2013a, p. 33). There are currently many issues in the dairy industry that are impacting New Zealand, "Global food production will increasingly run up against environmental and resource challenges, such as climate change/greenhouse gases, water withdrawal and land degradation" (Dairy NZ, 2017d, p. 4).

The Dairy Sustainability Framework was developed to further understand the action required in the dairy industry and has been designed to be in line with the United Nations (UN) Sustainable Development Goals (SDGs) (Dairy NZ, 2017c). This framework highlights the importance of environmental stewardship, climate change and sustainable use of food production and consumption with "increasing evidence of climate change risks becoming a key factor in global business decision making and investment" (Dairy NZ, 2017c, p. 26). From Dairy Action for Climate Change 2017-2018' (Dairy NZ, 2017b) a framework has been initiated to highlight the objectives and commitments of Dairy NZ and the industry. Dairy NZ are committed to helping environmental and social responsibility, wanting to create and build on a range of mitigation strategies and possible incentives to improve farm practices. Dairy NZ see this being done through benchmarking and farm reporting of emissions and environmental impacts and have hosted climate workshops and discussion groups and increased marketing through identifying dairy farmer champions (Dairy NZ, 2017b).

From 'Dairy Industry Strategy Refresh 2017' the Sustainable Dairying Workplace Action Plan has been initiated to assist farmers with adopting good practices, following standards and working towards goals, which also highlights the importance of altering public perception of the agriculture industry (Dairy NZ, 2017c). This leads to environmental stewardship and certification and accreditation. This highlights the issue of needing to be proactive rather than reactive in terms of sustainability. The 'Annual Report 2016/17' provided by Dairy NZ found that farmers see a negative perception towards the dairy industry from media, with Dairy NZ seeing potential to increase public perception of farming practices through farmers sharing their stories (Dairy NZ, 2017a).

Water issues are the primary issue facing the dairy industry in terms of environmental impact, "Water issues are the most pressing with significant public concern over the role of dairy in the deterioration of water quality" (Dairy NZ, 2017d, p. 2). A large focus has been the 'Sustainable Dairying Water Accord', which is a campaign that provided goals and targets to achieve in terms of water use in the dairy industry. So far, six out of eleven targets have been achieved with three more on track. This includes waterways being fully fenced, with research showing that some regions have improved water quality (Dairy NZ, 2017c). Public perception towards this strategy is improving, despite Dairy NZ working to publicise and market this (Dairy NZ, 2017c). Dairy farmers and companies supplied need to agree on an approach that improves on-

farm practices, this could be through irrigation and dairy shed use. Support has to be provided to help this through a range of tools, insight and knowledge (Dairy NZ, 2013a).

'Strategy for Sustainable Dairy Farming 2013-2020' (Dairy NZ, 2013a), 'Sustainable Dairying Water Accord' (Dairy NZ, 2015) and 'The Dairy Industry Strategy 2017-2025' (Dairy NZ, 2017g) analyse sustainable agriculture and marketing strategies within the dairy industry. 'Strategy for Sustainable Dairy Farming 2013-2020' highlights work that has been ongoing in NZ. With 87% of waterways on farms being accessible to cattle, 99% of these now have bridges and culverts to decrease environmental impact. 99% of farm owners have nutrient budgets with 56% having nutrient management plans with only 10% of owners in New Zealand not complying with dairy warrant of fitness relating to effluent management. Dairy NZ has currently implemented supplier agreements to research the reduction in greenhouse gas (GHG) emissions, leading to further environmental sustainability (Dairy NZ, 2013a). 'Sustainable Dairying Water Accord' is an initiative developed by Dairy NZ and a range of partners with the purpose to enhance the performance of dairy farming by reducing and preventing damage to freshwater in New Zealand. This is to be achieved by "Committing to good management practices expected of all dairy farmers in New Zealand" and "Recording pledges by the dairy sector, with the support of others, to assist and encourage dairy farmers to adopt those good management practices and to monitor and report progress" (Dairy NZ, 2015, p. 3). Dairy NZ is committed to designing and promoting resources and tools within the industry that can increase capacity of the dairy industry. Dairy NZ is there to prepare riparian management guidelines with councils by May 2016 which will also lead to betterment of environmental stewardship.

'The Dairy Industry Strategy 2017-2025' highlights a strategy for sustainable dairy farming. Goals and commitment targets were created to push dairy farming to be more competitive and responsible. In terms of marketing their commitment to protect and nurture the environment, four goals were made. These environmental goals focused on improving the health of waterways and enhancing biodiversity, having the dairy sector contributing towards New Zealand's climate change goals and implementing strategies to reduce GHG emissions. Dairy NZ also want to work to create a blueprint with different stakeholders including the communities and governments around sustainable land use and have had all farms implementing and reporting their sustainability plans through certified on farm practices. To do this, Dairy NZ is collaborating with a range of land users including governments and

communities to implement strategies relating to our waterways, climate change and land use (Dairy NZ, 2017g). Dairy NZ is currently on target with waterway sustainability with nearly 100% of waterways fenced and six targets having been met. Research has been tracking into reducing dairy farming's environmental footprint, with initiatives working on workplace action plans and development programs to help farm owners. Beyond this, farmers found that the industry needs to take on greater responsibility, with farmers seeing potential for more understanding of their levy distribution, research and development and further understanding of the meaning of 'good' within the industry, "Many farmers spoke of dairy needing to take a greater leading role on specific issues, with climate change and greenhouse gas emissions being an example where more leadership and information was needed" (Dairy NZ, 2017g, p. 15).

2.8.2 Beef + Lamb NZ

Beef + Lamb NZ are an industry advocate organisation for sheep and beef farmers in New Zealand. Sheep and beef farmers in New Zealand pay a levy to Beef + Lamb NZ which goes back into the industry. With new strategies being created, a reallocation of levy resources was implemented after farmer consultation to deal with the changing challenges within the industry (Beef + Lamb New Zealand Ltd, 2018e). 'Our Strategy 2017-22' highlights the priorities for Beef + Lamb NZ and farmers. Their vision is "Profitable farmers, thriving farming communities, valued by all New Zealand" (Beef + Lamb New Zealand Ltd, 2017d, p. 1) with their priorities focusing on supporting farmer excellence, government and public engagement, enhancing their environmental position, increasing market potential and building a great organisation. Beef + Lamb NZ are wanting to increase farmers' environmental reputation beyond just strategy and policy/regulation. Beef + Lamb NZ also want farmers to measure environmental change, urban communities to engage and trust farmers and their stories and also partner with a range of organisations to support the sector.

Beef + Lamb NZ work with a range of different stakeholders and communities. In relation to farm stakeholders, they work with more than just farmers including meat processors, research and education providers such as AgResearch, banks and universities, different associations, industries, councils and partnerships. With people and community, Beef + Lamb NZ work with a range of trusts, businesses, ministries and authorities which also includes Dairy NZ with the work they do. Being one of New Zealand's largest industries, there is a huge level of

stakeholder involvement (Beef + Lamb New Zealand Ltd, 2015). In 2015, only 0.6% of the Levy went towards the environment, although there were over 350 farmer events in in 2013/14 which included land and environment planning workshops (Beef + Lamb New Zealand Ltd, 2015). Currently communication with farmers is done through monthly phone surveys to make sure that farmers are aware and happy with what is happening with Beef + Lamb NZ, especially with any regional differences. This allows Beef + Lamb NZ to adapt their programs to be ones that are valued by farmers, with feedback showing that these programs have increased patronage (Beef + Lamb New Zealand Ltd, 2015). In contrast to this, it is interesting to note the new marketing campaigns that are currently being rolled out. This includes 'Taste Pure Nature'. Discussion has been around whether these are catering for farmer and sector needs or rather it is more of a duplication of marketing that is currently available (Beef + Lamb New Zealand Ltd, 2018e).

The Beef + Lamb NZ levy is looking to increase by 10cents to 70cents for sheep farmers and by 80cents to $5.20 for beef farmers, proving an extra $4 million for investment. This was due to a change in focus, with Beef + Lamb NZ wanting to accelerate campaigns including 'Red Meat Story' and 'Taste Pure Nature' to differentiate their product and meat origin compared to their competitors. Beef + Lamb NZ are also wanting to increase their capabilities in dealing with biosecurity risk, telling the farmer story to the country and increase environmental work which would influence policy development. The sector is trying to combat the environmental challenges which have impacted public perceptions of the sector and brand. Farmers have been found to want Beef + Lamb NZ to take on an environmental leadership position on behalf of them, which in turn would hopefully lead to better engagement and advocacy with the government and public (Beef + Lamb New Zealand Ltd, 2018e). With this occurring, there has actually been a reduction in spending in some areas which has allowed for reprioritisation of expenditure to Beef + Lamb NZ's key priority areas. This will allow Beef + Lamb NZ to market the 'Pure New Zealand' branding overseas, provide more resources for greater communications from farmers to society and environmental strategy increase which has increased resources (Beef + Lamb New Zealand Ltd, 2018e). Although sheep numbers have decreased by 52% since 1990, lamb produced has only gone down 8% which shows that productivity has increased. Beyond this, GHG emissions of both sheep and cattle has decreased by 20% since 1990 and export value has increased. Beef + Lamb NZ see this move as one that is working towards more sustainable meat production, although they acknowledge that there is more work to do (Beef + Lamb New Zealand Ltd, 2017a).

‘Annual Report 2016-17’ highlights that Beef + Lamb NZ has laid a new strategy for the upcoming five years. This is said to be ‘a pathway driven by a vision created by and for our farmers’ (Beef + Lamb New Zealand Ltd, 2017a, p. 16). There have been extensive talks with farmers and a range of stakeholders when looking at creating a new strategy which includes making sure that all farmers have an active farm environmental plan (FEP) by the end of 2020. Looking further ahead, the new government has targets in place with wanting the country to have net zero emissions by 2050. This puts a lot of pressure and opportunity in the red meat sector. Beef + Lamb NZ has been providing environment and land workshops which has only been taken up by a fraction of their stakeholders “in 2016 more than 1,000 farmers attended Beef + Lamb NZ’s Farm Environment Planning and Land and Environment Planning Workshops” (Beef + Lamb New Zealand Ltd, 2017a, p. 28). Beef + Lamb NZ see farmers at the forefront of advocacy, especially when looking at environmental strategy with more planning, solutions, workshops and resources being provided. This will hopefully help measure the impact and also improve the environment “the strategy will set a path to 2040, guiding sheep, beef and dairy levy payers forward in a way that is environmentally, economically, socially and culturally sustainable, and ensuring they have access to the right tools and best practices to optimise their farming business” (Beef + Lamb New Zealand Ltd, 2017a, p. 28). This highlights the importance of farmer engagement through participation in workshops, research, and advisory groups and farmer awareness through surveys (Beef + Lamb New Zealand Ltd, 2016, 2017a).

Beef + Lamb NZ has provided a lot of insight into their overall strategy and their environmental position and strategy. ‘Our Strategy 2017-22’ provided a plan to reach in 2022. A part of this focus was on farmers actually being recognised for their environmental commitment and maintenance of land productivity. Beef + Lamb NZ saw this being done through supporting farmer excellence through initiatives such as a benchmarking system, action groups, various programmes and online resources. Beef + Lamb NZ would build on farmer reputation both domestically and internationally through Beef + Lamb NZ sector environmental strategy implementation, fit policy and regulations, having tools to measure and adapt to environmental change and partner with other stakeholders. This is heavily dependent on telling the farmers environmental and farm stories and getting urban and outside communities engaged in farming and their environmental practices (Beef + Lamb New Zealand Ltd, 2017d). The environmental strategy was developed to push harder on environmental stewardship and performance by not only working with farmers to provide long term goals, but also to provide a tangible outline of

how the sector can do better. The key areas of focus include healthy productive soils, clean water where people can gather food and swim in, diverse biodiversity and working towards carbon neutrality. To do this, Beef + Lamb NZ set an implementation plan for farmers and the industry. Beef + Lamb NZ believe that the environmental issues need to be seen as a whole rather than individually; all farmers should have an environmental plan, there needs to be more tools and development in communities and tools to understand and prevent environmental impact (Beef + Lamb New Zealand Ltd, 2018b).

The point of having an environmental strategy that has a wide scope is so that farmers are able to have all areas of environmental sustainability covered when implementing their plan. This is found in their FEP's and the industry's environmental strategy (Beef + Lamb New Zealand Ltd, 2018d). This strategy is also for the government, general public and stakeholder partners in the industry. Beef + Lamb NZ see the strategy and plan starting with and managed by the individual farmers and see themselves as more of a starting support, where they provide the farmers with knowledge, tools and incentives to help with improvement. For this to happen, farmers need to work with a wide range of stakeholders and community groups to come up with methods that can be used on a larger scale. An issue currently is involving the larger New Zealand community so that they can understand the perspectives of the farmers and industry. As part of the strategy, there were a range of starting foundations in the plan around cleaner water, carbon neutrality, thriving biodiversity and healthy productive soils leading to profitable farms and community partnerships. Beef + Lamb NZ saw an implementation plan occurring through different initiatives including an active plan on every farm, catchment communities and partnerships working together, support and expansion of farmer knowledge, research into effective action, active engagement between farmers and stakeholders around policy and planning and communications, representation of farmers' stories and the national brand (Beef + Lamb New Zealand Ltd, 2018c). Although there is support, research and research provided to support farmers, there is limited information on how successful this has been, including the implementation of the 'Canterbury Farm Environment Plan Guidelines' which helps Canterbury farmers on their environmental and business strategy (Beef + Lamb New Zealand Ltd, n.d).

Chapter 3: Methodology

3.1 Introduction

The aim of this research is to understand the link between sustainability and agriculture, specifically the research will look into the environmental strategies and practices used by the industry bodies and farmers. It will explore the potential disconnect between these industry bodies, farmers and the general public which is outlined in the previous chapters. This chapter plans to expand on this discussion. Firstly, it will cover the ontological, epistemological and theoretical assumptions. Following this, the research design, method, analysis of data and quality measurements will be discussed and assessed. Finally, any relevant ethical considerations from this research will be discussed. As mentioned previously, a qualitative approach is used due to the exploratory nature of this research into the agriculture industry. Creswell and Creswell (2017) see a qualitative research approach as one where the inquirer makes knowledge claims primarily based from a constructivist perspective (e.g. the different meanings of individual experiences and the meanings constructed with the intention of developing themes and patterns). Otherwise, Creswell and Creswell (2017) see this approach from an advocacy/participatory perspective (e.g. collaborative, change oriented, political or issue oriented) which allows participants to develop their own meaning in relation to their experience. Qualitative research cannot be compressed to solely its methodology or data analysis, with the study represented in its entirety (Flick, 2009). Qualitative research has been deemed appropriate for this study and its use will be discussed in the remainder of this chapter.

Due to qualitative research being quite open ended, there is no single definition and paradigm that defines it (Denzin & Lincoln, 2011). Punch (2005) simply defines qualitative research as "empirical research where the data are not in the form of numbers" (p. 3). Denzin and Lincoln (2011) state that "Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self/ At this level, qualitative research involves an interpretive, naturalistic approach to the world" (p. 3) This has built on the prior definition, where a multi-method approach is used in a more natural setting where phenomena are interpreted in relation to the

meanings that people believe in (Denzin & Lincoln, 1994). Strauss and Corbin (1990) seek to define qualitative research as entirely separate from quantitative research. Qualitative research is research that has not produced findings through statistical or other quantitative analysis. Qualitative analysis is used differently by researchers depending on a range of factors. This includes ontology which is the nature of being, their beliefs about the social and natural world and the knowledge that can come from this. Epistemology looks at the nature of knowledge and how that knowledge can be acquired. Further to this, qualitative research is also differentiated through the goals and purpose of the research being undertaken, participant characteristics, the funders and audience of the research and also the environment and position that the researcher is in themselves (Ritchie, Lewis, Nicholls, & Ormston, 2013).

With qualitative research taking information from the point of view of participants, reality is not always defined, rather it "makes use of the unusual or the deviant and unexpected as a source of insight and a mirror whose reflection makes the unknown perceptible in the known, and the known perceptible in the unknown, thereby opening up further possibilities for (self-) recognition" (Flick, Von Kardorff, & Steinke, 2004, p. 3). Further to this, this research also uses strategies of inquiry which include narratives, case studies, ethnographies and phenomenologies. These methods allow researchers to collect data that later allows them to develop themes from this data (Creswell & Creswell, 2017). This presents the researcher with the opportunity to conduct a thematic analysis (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006) which is one of the ways that qualitative data can be analysed. This chapter intends to provide an in-depth explanation of the methods and methodology that have been utilised throughout the course of this research, the theoretical background to the methodology and the process by which the sample was chosen, and the data was collected and analysed.

3.2 Ontological and Epistemological Considerations

The philosophy of research and the foundations of the ideas of the research are needed before any research can be conducted. Prior understanding of the research philosophy helps to give a more in-depth and broad perspective of research, allowing the thesis to have a clearer purpose in a greater context and environment. It also provides any implications in terms of why, what or how the research is carried out and later performed (Carson, Gilmore, Perry, & Gronhaug, 2001). By developing a philosophical perspective, the researcher has to make several

assumptions in relation to two dimensions: the nature of society and the nature of science (Burrell & Morgan, 1979). The nature of science takes either an objectivist or subjectivist approach to research. Both of these approaches have four key defining assumptions which concern ontology (nature of reality), epistemology (nature of knowledge), human nature (whether controlled or not) and methodology (Holden & Lynch, 2004). Objectivism and subjectivism are seen as a continuum's polar opposite in their dimension (Holden & Lynch, 2004). The assumption of human nature relates to whether the researcher sees man as the controller or controlled. The three first assumptions have implications on the assumption of methodology where it is the researchers 'tool box', the means by which the researcher can conduct an investigation (Holden & Lynch, 2004). In summary, these assumptions relate with "the nature, validity and limits of inquiry" (Rosenau, 1992, p. 109) of the research, with these assumptions being discussed comprehensively below.

Assumptions of an ontological nature concern the actual reality of the phenomena that is being investigated. Simply, this is whether the reality exists in an external world to the individual, or whether the reality is determined internally in the individual's mind (Burrell & Morgan, 1979). Ontology is defined by Crotty (1998) as concerning the nature of existence, being somewhat the structure of reality, and therefore the study of being and by Gray (2014) as "the study of being, that is, the nature of existence and what constitutes reality" (p. 19). This discusses whether 'reality' is investigated internally or externally to the individual. From a positivist perspective, the world is seen as independent from our individual knowledge. On the other hand, for relativists, there are multiple ways of accessing multiple realities which depend on the individual (Gray, 2014). This highlights an important point of research, the individual's view of reality as being subjective or objective, which is reflected through the individuals actions and answers (Burrell & Morgan, 1979).

A large proportion of research has leaned towards a positivist stance on ontology. This research has focused around the assumption that reality is objective and waiting to be discovered, with the concept being that knowledge can be identified and communicated with others (Holden & Lynch, 2004). This relates to the assumptions around epistemology which is the study of the understanding and nature of knowledge, as well as the individual's methods of communication and understand of the world (Holden & Lynch, 2004). Epistemology provides background into helping to understand what knowledge is legitimate and adequate (Gray, 2014). Burrell & Morgan (1979) go beyond how the forms of knowledge are obtained, and look into what

knowledge is regarded to be 'true' and 'false'. This was raised by (Gettier, 1963) who discussed what was truly knowledge and whether justified true belief counted as knowledge, or whether it was something different. Crotty (1998) states three different epistemologies, each with different theoretical underpinnings. These are subjectivism, objectivism and constructivism. Constructivism is seen as a middle ground between objectivism and subjectivism. In choosing an epistemological position, the researcher has to identify, explain and justify their philosophical grounding (Crotty, 1998).

Constructivism, being the middle ground, contrasts with positivism and objectivist epistemology. It states that knowledge does not exist outside an individual's mind. Constructivism highlights that truth cannot be discovered, rather knowledge is constructed by individuals through their experiences and engagement with the world's realities (Crotty, 1998). From this perspective, reality is viewed as a social construction, it "focuses on analysing the specific processes through which reality is created" (Morgan & Smircich, 1980, p. 497). Constructivism is the product of the beliefs of society and culture, with knowledge gained through understanding the process of reality creation (Morgan & Smircich, 1980). This approach has the researcher relying on the interaction between the social actors with questions being asked, including; "How do humans act towards one another and the objects in their worlds? What meanings do they attach to them? (Esterberg, 2002, p. 15).

Their view of ontology impacts their epistemology which in turn impacts their perspective on human nature which leads to the logical choice of methodology (Holden & Lynch, 2004). A constructionist epistemological position has therefore been applied to this study, with individuals having their own understanding and meaning to objects and their reality. This is supported by Crotty (1998), with the assumption that individual perception of reality and knowledge construction is ingrained in the culture and society that they are involved in. Although there may be some disagreement between individuals due to ontological and epistemological views, this approach is most appropriate for this research context and the researcher's views. In sustainable agriculture, there has been a move from a positivist view (Pretty, 1995) towards constructivism because of the different theories and knowledges around sustainable agriculture and the stakeholders in the industry (Šūmane et al., 2018). Pretty (1995) stated that conditions and knowledge changes within the industries with farmers and communities also needing to be encouraged and allowed to change their ideas and views. The importance of local and individual actor views in sustainable agriculture was highlighted. "As

knowledge and understanding are socially constructed, what each of us knows and believes is a function of our own unique contexts and pasts" (Pretty, 1995, p. 1250), emphasising the different truths. Šūmane et al. (2018) explores the farmers' knowledge and practices. A range of different knowledges differentiating from the formal system in agriculture were used, with case studies of different perspectives and agricultural practices analysed and understood. Recent research confirmed that advancement in sustainable agriculture is done through a diverse range of actor knowledge and networks.

3.3 Theoretical Assumptions

The assumptions underpinning qualitative research are discussed with regard to the theoretical assumptions in order to display any relevance in the research context, and in turn, the suitability of qualitative methodology. Flick et al. (2004) researched and defined these assumptions which have concluded key points relevant to this research context. Firstly, it is stated that "Social reality is understood as a shared product and attribution of meaning" and that "Processual nature and reflexivity of social reality are assumed" (Flick et al., 2004, p. 7). These assumptions relate to individual perceptions that humans have on their own reality. Later, Flick et al. (2004) proposes "'Objective' life circumstances are made relevant to a life-world through subjective meanings" and that "The communicative nature of social reality permits the reconstruction of constructions of social reality to become the starting point for research". These four assumptions are the base of constructivism.

Social reality defined is "the result of meanings and contexts that are jointly created in social interaction" (Flick et al., 2004, p. 6). Holistically, these concepts are seen as the foundations of qualitative research as they are not defined as relating to solely one theoretical assumption or methodology. Researchers generally want to understand the interviewees, by gaining understanding of the meanings, concepts, ideas and experiences in their own terms (Spiggle, 1994). This understanding is seen as only one 'layer' of meaning, with many other conceptual layers building upon this (Wallendorf & Brucks, 1993). We "may grasp their meanings and experiences by translating between their "text" (e.g. a passage in an interview) – the target domain, the distant text – and our own experience, knowledge, and ideas – the source domain" (Spiggle, 1994, p. 499).

In this case, the research takes a constructivist stance. Strauss and Corbin (1990) view a constructivist view as concepts and theories that are "constructed by research participants who are trying to explain and make sense out of their experiences and/or lives, both to the researcher and to themselves. Out of these multiple constructions analysts build something that they call knowledge" (p. 10). With all constructivist approaches, the relationship to reality is examined through dealing with the constructive processes in approaching it (Flick, 2004a). Given (2008) expanded on constructivism, reality is seen as relative, multiple and not governed by natural laws with individuals constructing their own knowledge through their learning and experiences. Its knowledge is constructed between that of the researcher and participant through the inquiry process alone. From this inquiry, insight and understanding emerges between the researcher and participant through joint construction (Given, 2008).

The constructivism approach has been chosen for this research due to the context of the research; to investigate the disconnect between farmers and industry organisations, gaining insight into their perceptions of the industry. The aim of this research is to gain knowledge into areas that are yet to be investigated. Baghramian and Carter (2015) reiterate the importance of this and constructivism, seeing importance in understanding the different knowledges and truths that are present for individuals. This will provide insight into the behaviour and happenings in the industry and what is actually perceived and received by the stakeholders. The constructivist approach is important due to the ability to understand and interpret the individuals' knowledge and reality without being further influenced by any externalities that may be present.

3.4 Methodology

The methodology is important when considering the research process. This is because the methodology and associated methods need to match the ontological, epistemological, and theoretical assumptions which are vital for valid research (Holden & Lynch, 2004). Methodology is the strategy used in order to understand the topic under investigation, it is defined as "the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes" (Crotty, 1998, p. 3). As discussed previously, the researcher has chosen to adopt a constructivist stance for this research, with an appropriate qualitative research method selected as a result of this

decision. Research intention and scope of the research questions were also considered when deciding upon the methodology/method mix as an improper match of methodology and research problem could produce invalid results (Holden & Lynch, 2004). Following this, the methodology chosen by the research for this research was thematic analysis, with semi-structured interviews being used as the method of data collection.

3.4.1 Thematic Analysis

The chosen methodology for this research is thematic analysis. Defined, it is "a method for identifying, analysing and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic" (Braun & Clarke, 2006, p. 79). It is a widely used form of qualitative analysis and is the key approach to this type of research (Braun & Clarke, 2006). It helps to form different patterns and themes in the data which in turn allows researchers to compare and contrast their findings (Braun & Clarke, 2013). Despite its widespread use, it was only recently that the method received the recognition and validity to be among methodologies that have primarily been held solely by more well-known methodologies such as grounded theory (Braun & Clarke, 2013). Spiggle (1994) states that "Interpretation of others' experiences is inherently subjective" (p. 499). Therefore, thematic analysis is an appropriate choice as it explores themes that emerge as holding importance for the described phenomenon (Daly, Kellehear, & Gliksman, 1997). It also aids in the recognition of patterns within the data where the themes that emerge later become the categories that are analysed (Fereday & Muir-Cochrane, 2006). It is hoped that this thematic analysis provides the researcher with accurate findings and insight within the research context.

Thematic analysis is an accessible and theoretically flexible approach to qualitative data analysis. It is easily applied to a variety of theoretical and epistemological assumptions and is able to provide unforeseen insights while also summarising key features of a large quantity of data (Braun & Clarke, 2006). Theoretically, thematic analysis is flexible as it does not follow a particular foundation for language or any other frameworks that explain human behaviour, this is due to the nature of investigating patterns regardless of language (Braun & Clarke, 2013). As thematic analysis is theoretically independent, it can be applied to a range of different theoretical frameworks.

It is important to make the right strategic decisions when conducting thematic analysis. Decisions include: what is and is not a theme, whether the research is using inductive or theoretical analysis, and the level of fit with the ontological and epistemological assumptions (Braun & Clarke, 2006). An inductive approach in analysis is where the identified themes are strongly linked to the data (Patton, 1990), where coding is done in a way where it is not attempting to be applied into any pre-existing theoretical frame while a theoretical analysis is where the coding is directed by the researchers' theoretical or analytic interest (Braun & Clarke, 2006). Further decisions are made in terms of the level that themes are analysed in the research, taking either the semantic or latent approach. When using a semantic approach, what is said or written by research participants is taken as what it is, with researchers not looking further than this, identifying only surface or explicit data meaning. A latent approach goes further than a semantic approach with data analysis. It identifies the underlying assumptions, ideas, ideologies and conceptualisations that are seen as shaping or informing semantic data content (Braun & Clarke, 2006). Latent themes are generally of a constructivist nature, which is in line with the epistemological assumptions of this research. The researcher regards thematic analysis as the best method to utilise when analysing the collected data. It is flexible, adaptable, has the ability to analyse latent themes at a range of levels and aligns to the chosen epistemological stance.

3.5 Research Design

To produce good results in qualitative research, the research must be designed to a high standard and have a clear purpose. There needs to be consistency between the research methods and the research question, which in turn generates reliable and valid data (Ritchie et al., 2013). To achieve this in qualitative research, research questions were developed. Flick (2004b) highlights the importance of getting the research questions right. In some cases, these questions may be too broad which makes guidance in research difficult when initially planning and implementing studies while in others these may be too narrow, where new discoveries are limited and the goal of the investigation may be missed. Below are the guiding research questions of the study.

1. How does sustainability influence the stakeholders' goals and planning?
2. What sustainable initiatives and strategies do you see being done as stakeholders of these organisations? Is there a disconnect?
3. What improvements do you see as needed to improve your experience and livelihood of your business? How can these organisations provide and market this?
4. Does this lead to New Zealand being a leader in sustainability in the industry?

These questions assist in the grounding of the research process and highlight the exploratory nature of the study, helping to guide the interview question to help gather as much information and insight into the field of this investigation.

The aim of this research design is to outline the approach for the gathering and analysis of data. This will help the researcher in answering their chosen research questions. As this study is of an exploratory nature, the most appropriate method choice is qualitative research methods. Secondary research was collected through the analysis of documents and information from Beef + Lamb NZ and Dairy NZ to aid the primary research. These findings were used to gain a greater understanding on how the industry operates and the strategies and approaches that they take in terms of sustainability and the environment. This, along with researcher knowledge helped guide the research questions into areas relating to farming practices, farmer perceptions and farmer interactions. This would later help understand more about the industry and the disconnect that may be present. Primary data was collected using semi-structured interviews with the sample of participants selected from farmers within Canterbury, New Zealand. The data was collected and analysed using thematic analysis. Due to the nature of the participants, it was hoped that they would appropriately represent the farming community. The following sections further discuss the sample and how the primary data was collected and analysed.

3.6 Data Collection

Data collection is an important part of the research process. This section discusses how the sample has been chosen and how the data was collected, and later analysed.

3.6.1 Sample Criteria

When collecting data through survey research, it is important to collect data that is representative of a population (Bartlett, Kotrlik, & Higgins, 2001). Samples that are inappropriate, excessive or inadequate can damage the level of accuracy and quality of the research (Bartlett et al., 2001). This highlights the importance of sample selection and size as a consideration for the researcher. Criteria was needed to filter out unsuitable participants from suitable participants. This understanding allowed the selection of suitable research participants. Using criteria is essential to help guide research decisions, this allows researchers in future studies to gain similar outcomes (Merkens, 2004). Previous research into agriculture and marketing strategies has predominantly focused on agriculture cooperatives (Barham & Chitemi, 2009; Bernard & Spielman, 2009; Fischer & Qaim, 2012; Giesen et al., 2009; Wollni & Zeller, 2007) with Bernard and Spielman (2009) highlighting the importance on focusing efforts and research towards the farming community. A similar approach has been taken compared with past research (Ingenbleek & Meulenberg, 2006; Šūmane et al., 2018).

Due to the scope of the study, participants will need to be farming in the Canterbury region in the South Island of New Zealand. Further criteria for this research is that participants will have to be farmers who are owners/managers of farms, with the farmers paying levies to Beef + Lamb NZ and Dairy NZ, who are both advocacy and support organisations for their sectors (Beef + Lamb New Zealand Ltd, 2018a; Dairy NZ, 2017e). Beef + Lamb NZ is farmer-owned and represents sheep and beef farmers around the country, while Dairy NZ also provides research and support to help the dairy industry. Farmers invest a money into a wide range of programmes and strategies (Beef + Lamb New Zealand Ltd, 2018a; Dairy NZ, 2017e). These criteria were used for the selection of the sample involved in this study. For ethical purposes, participants had to be over the age of eighteen to participate in this study. It is believed that this sampling approach will provide the researcher with data that will build an understanding of the sustainability and strategies within the industry, as well as a potential disconnect present.

3.6.2 Sample Recruitment

The recruitment of the sample in this study was done in a way that met the required criteria, and is representative of the farming community in Canterbury. Recruitment primarily occurred through the knowledge and experience of the researcher, who grew up on a farm in Canterbury.

This was achieved through networks the researcher had including family members, friends and contacts within the agricultural industry. The researcher outlined the criteria and provided a brief explanation of what the study entailed and the process involved if the participants chose to become involved in the study. Once participant interviews were completed, the participant had the opportunity to pass on the researcher's information to farmers they knew. If they were interested in participating in the study and met the criteria, then they were able to contact the researcher. All participants were incentivized with a $20 supermarket voucher. Participants who were interested in participating made contact via email, and were given the Information Sheet (Appendix 1) to read which outlined details of the study prior to the interviews.

The researcher received response and interest from a range of farmers throughout Canterbury. From the respondents, eighteen participants were selected and later interviewed. Saturation of information was important when conducting interviews to collect data. For this reason, at least twelve interviews were conducted (Goulding, 2005; Guest, Bunce, & Johnson, 2006). Saturation was reached in this study, with no new information gained by the end of the interviews. The participants were primarily male with a total of five females participating, and were a variety of ages over the age of eighteen in the agriculture industry. Some participating farmers had more than one farmer perspective which allowed for greater understanding and information saturation. Table 1 in the below section outlines the participants and their characteristics in this study. Prior to the interviews taking place, participants were asked to read and sign the Consent Form (Appendix 2). This was done to ensure the privacy of the participants and any information that was given. The names mentioned in this research are pseudonyms as a result of this.

3.7 Method - Semi-Structured Interviews

When researching and selecting the method by which an investigation is conducted, it is vital that the appropriate method is employed to achieve a more desired outcome of the study. Semi-structured interviews provide opportunities to gain an in-depth understanding of the participants involved in the research. There is the ability to enquire openly to participants about situation meanings or motives, collect everyday theories and self-interpretations in different and open ways. Beyond this, the researcher can also discuss a range of subjects and build more on participants' understanding and knowledge (Hopf, 2004). Semi-structured interviews also

provide researchers with the opportunity to explore the opinions and perspectives of the participants on more complicated or personal issues, which allows for more discussion and clarification with participants (Barriball & While, 1994). This has many advantages. The researcher is given the opportunity to gain expert knowledge from participants in their chosen research, and can record and analyse their subjective perspective or data that relates to their biography (Hopf, 2004). The aim of this research is to understand a specific industry and group of people, which deems this method appropriate for this research.

With this research utilising semi-structured interviews, there is an element of fixed questions which are used as a guide for the interview process. With this, there is an element of flexibility, which allows for movement away from the key questions to allow conversation in other discussion areas that otherwise would have been missed in the research (Cavana, Delahaye, & Sekaran, 2001). This allows the interviewer to maintain a structure and flow for the conversation, while also allowing flexibility that may be found in both structured and unstructured interviews. Beyond this, the interviewer has more control over discussion areas which leads to greater relevant insight and information generation. The Interview Guide can be found in Appendix 3. The primary goal is for the interviewee to feel comfortable; it is for that reason that initially there are introductory questions before further discussion is made regarding the relevant industry, sustainability and strategies. The background research into the industry and the literature review has provided motivation and insight for the questions, which has allowed key topics and themes to be formed prior to interviews commencing.

Initially, the Information Sheet was provided and a suitable interview time for the participant was arranged. Once a copy of the Consent Form was signed and returned, a gift card for the supermarket was provided prior to the interview commencing. The interviews took place at a location that was chosen by the participant, and one that they were comfortable in. Due to the nature of the research, the interviewer travelled around to meet with the interviewees. All of the interviews were recorded with permission from the participants, and this enabled the interviewer to transcribe the interview and allowed for further and accurate analysis.

The interviews were of different length, with the shortest lasting thirty two minutes and the longest lasting seventy four minutes. When choosing the number of interviews to be conducted, there were factors to consider. It was decided when the interviews reached a point of saturation, or no new information and themes are found, that it would be the suggested end to interviewing

(Goulding, 2005). The research shows that twelve interviews was where saturation often occurred (Guest et al., 2006). It was for this reason that it was chosen to conduct between twelve to fourteen interviews. Guest et al. (2006) found that at as early as six interviews, some themes were found. This number of interviews is similar to what has been done in previous research (Banerjee, 2001; Heath, Tynan, & Ennew, 2011), with the same done for case studies, with some involving interviews (Ingenbleek & Meulenberg, 2006; Šūmane et al., 2018). This was also in line with the scope and timeframe of the research. The process of semi-structured interviews has been used to gain a range of perspectives and opinions on the sustainability and strategies used and displayed in agriculture organisations and farming operations. The sample included a range of farmers within the agriculture industry in Canterbury, with the farmers also coming from different farm types. Table 1 below provides an overview.

#	Participant/Farm	District	Farm Size (ha)	Levy of
1	Kevin	Ashburton	<1000ha	Beef + Lamb NZ
2	Cameron	Ashburton	<1000ha	Beef + Lamb NZ
3	Daniel and Laura	Ashburton	>1000ha	Dairy NZ & Beef + Lamb NZ
4	Ray	Ashburton	<1000ha	Dairy NZ
5	Andrew	Ashburton	<1000ha	Dairy NZ
6	Jenny and Nigel	Selwyn	<1000ha	Dairy NZ
7	Tim	Ashburton	<1000ha	Beef + Lamb NZ
8	Brad	Ashburton	>1000ha	Beef + Lamb NZ
9	Paul, Sandra and Fred	Ashburton	<1000ha	Beef + Lamb NZ
10	Arthur	Ashburton	<1000ha	Dairy NZ
11	Jack and Shirley	Ashburton	<1000ha	Dairy NZ
12	Derek	Hurunui	<1000ha	Dairy NZ
13	Robyn	Ashburton	<1000ha	Beef + Lamb NZ

Table 1: ***Summary of Sample Demographics***

3.8 Transcription

Transcription is described as "the graphic representation of selected aspects of the behaviour of individuals engaged in a conversation" (Kowal & O'Connell, 2004, p. 249). Transcription of conversations with participants are needed to allow a temporary conversation to be accurately available on paper or electronically for further analysis. The reason for having a transcription is that it represents the conversation as accurately as possible in terms of wording (verbal features), acoustics such as pitch and loudness (prosodic features) and also the accompanying non-linguistic behaviour (Kowal & O'Connell, 2004). In this research context, the transcription aims to report all relevant details of the interview to provide increased accuracy for analysis. Due to the ethical considerations of the information, the privacy and security of the raw data was highly important. Transcription was done by the researcher on completion of the interview.

3.9 Data Analysis

Due to the nature of the data collection and the study, thematic analysis was chosen as the suitable method for data analysis. Thematic analysis was utilised through following the guidelines outlined by Braun and Clarke (2006). In their article, thematic analysis is discussed from a psychological point of view. This outlined the benefits associated with taking this perspective, while also providing a guide on the best way to utilise thematic analysis. This approach has six different phases: familiarising yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and finally production of the report (Braun & Clarke, 2006).

The data analysis process followed the guidelines from Braun and Clarke (2006) with the themes drawn out from the interview data. Due to the nature of interpretation, it may be difficult to present "the intuitive, subjective, particularistic nature of interpretation renders it difficult to model or present in a linear way" (Spiggle, 1994, p. 497), but by utilising thematic analysis, themes were able to be developed. The interview transcripts allowed quotations from the interviewees to be utilised, which can be found in the findings section, Chapter Four. These quotations were of different lengths and provided insight into the data provided, as well as a greater understanding and information around the participants' behaviour. The coding initially produced seven items that held varied importance and strength. After further analysis and

reading, these were consolidated and/or withdrawn, which concluded five key themes that held the most significance in the research. There were sub-themes grouped under these five key themes; sustainability; environmental strategies and practices; relationship with industry body; public and sector relationship and disconnect; and telling of the farmer story. A conceptual model (Figure 3) was utilised in the findings chapter to further interpret the research around sustainability. The themes were interpreted and discussed individually. Relevant quotations were used throughout to complement the findings, with relevant literature also linked. Throughout the findings, the discussion flows in a coherent manner, with the data ensured to be faithful in relation to research intension.

3.10 Evaluating Data Quality

Maintaining research of a high quality is important for researchers. There has been debate around ways to confirm high quality findings in qualitative research, especially due to the definitive results that occur in the outcome of quantitative research (Guba & Lincoln, 1981). While definitions vary among academia, generally it is considered high quality if "Data and information are of high quality if they are fit for their uses (by customers) in operations, decision making, and planning" (Redman, 2008, p. 56). Compared to quantitative research, qualitative research is more complicated in terms of its data. This has led to some dispute among academics on how best to measure qualitative data quality (Morse, Barrett, Mayan, Olson, & Spiers, 2002). The concept of 'Trustworthiness' has been chosen to evaluate the data collected, which authors Guba and Lincoln (Guba & Lincoln, 1981, 1982; Lincoln & Guba, 1985) have substituted for the concepts of reliability and validity.

The concept of 'Trustworthiness' contains four aspects; credibility, transferability, dependability and confirmability. Each of these aspects will be addressed in this section. A move from reliability and validity was selected due to these concepts believing in a singular truth, whereas this research believes in multiple truths, dependent on an individual's interpretation of reality (Lincoln & Guba, 1985). An outline of trustworthiness is provided by Shenton (2004). Credibility is the researcher working to "ensure that their study measures or tests what is actually intended" (p. 64), with the phenomenon presented in its true picture. For transferability, the researcher needs to "provide sufficient detail of the context of the fieldwork for a reader to be able to decide whether the prevailing environment is similar to another

situation with which he or she is familiar and whether the findings can justifiably be applied to the other setting" (p. 63). Although dependability is difficult in qualitative research, the researcher should strive to allow a future researcher to repeat the study. Finally, for confirmability, researchers must show that the findings arise from the data analysed and not from any biases or own perspectives (Shenton, 2004).

3.10.1 Credibility

When conducting qualitative research, the outputs of the study must be both credible and trustworthy. Researchers have found that this can be a significant challenge in studies where semi-structured interviews are conducted (Hopf, 2004). This is compared to quantitative research which primarily focuses on the validity and reliability of the research. Patton (1999, p. 1190) states that credibility in qualitative research is dependent on three related distinct inquiry elements. Firstly, the rigorous techniques and methods for gathering high quality data that are carefully analysed, with attention to issues of validity, reliability and triangulation. Secondly, the credibility of the researcher, which is dependent on training, experience, track record, status and presentation of self. Finally, the philosophical belief in the value of qualitative inquiry, that is, a fundamental appreciation of naturalistic inquiry, qualitative methods, inductive analysis, purposeful sampling, and holistic thinking.

The nature of the method and methodology in relation to credibility is also important. Hardie, Shilbury, Ware, and Bozzi (2010) state that validity and reliability is not dependent on repeating the same words in every semi-structured interview question with participants, but more so the conveying of consistent meaning. It can be expected that there will be lexical and linguistic differences among individual participants, therefore it is important to respect their participants and their effort towards producing statements of meaning, regardless of their wording (Hardie et al., 2010). By facilitating equivalence between the meanings of each participant's statements, it will help to analyse and compare the data. Being technically rigorous is also vital during qualitative research; there is a high level of dependence on this in relation to credibility (Patton, 1999). To produce credible data, the researcher has to ensure that the researcher has to ensure the validity of the interview process, encourage participants to provide useful data and guide the framing of philosophical beliefs in the research. Importantly,

the researcher must also be credible and non-biased. In this study, the researcher ensured credibility in all aspects, highlighting the importance of credibility in their research.

3.10.2 Transferability

The transferability of research is important for validity. Malterud (2001) discusses how research findings can be applied to additional contexts externally outside the research. In qualitative research, Malterud (2001, p. 485) states the aim of research as "to produce information that can be shared and applied beyond the study setting", outlining the transferability of the study context, although in saying this, no study is universally transferrable. Therefore, the study should consider a level of transferability in their method and results (Malterud, 2001).

There are different ways that transferability can be enhanced, most notably, using multiple contexts. Spiggle (1994) mentions that beyond only multiple contexts, they increase their transferability by drawing their data from multiple sites which in turn enhances the generalisability of their analysis. Baxter and Eyles (1997) discuss the concept of trustworthiness from Guba and Lincoln (Guba & Lincoln, 1981, 1982; Lincoln & Guba, 1985). Two practices are put forward that may contribute to the satisfaction of the transferability criteria. These practices are 'purposeful sampling' and 'thick description'. Purposeful sampling is where an individual in the studied segment is selected specifically and intentionally due to the research context and participants defining criteria. This is instead of being selected through random or probability sampling approaches. In this research, purposeful sampling was used as the participants were selected from farmers within the Canterbury region who are levy payers of the organisations who implement a range of environmental and sustainable strategies.

The aim of this study is to gain new understanding of a particular area of research, most notably sustainability strategies within agriculture. Therefore, there are limitations around the transferability of the findings. The reviewed literature covered a range of contexts which include marketing strategies, sustainable marketing initiatives and corporate sustainability, which highlights potential transferability into other sectors and contexts. The methodology chosen for this study also compliments further transferability opportunities.

3.10.3 Dependability

Simply, dependability is defined as "the degree to which it is possible to deal with instability/idiosyncrasy and design induced change" (Baxter & Eyles, 1997, p. 516), with any variability wanting to be removed if possible. It is further suggested that dependability focuses on matching findings with contexts over space and time, which highlights the importance of accurate documentation of research context (Baxter & Eyles, 1997). Due to this, it is primarily the researcher who has to handle dependability as the researcher has to maintain homogeneity in relation of their findings and their interpretations to the same contexts consistently. Due to the subjective nature of the researcher's interpretation of data, it has to be combatted. Baxter and Eyles (1997) agree with Lincoln and Guba (1985) where it is suggest that low-inference descriptors and multiple researchers should be used to increase dependability. Simply, this is where a second researcher looks at the data interpretations, which ensures consistency.

When data interpretation by the researcher is incorrect or inappropriate in the subject, dependability can be jeopardised. This is stated by LeCompte and Goetz (1982) as insufficient poorly defined analytical premises and constructs. It is the result of the subjective nature of the themes and concepts that are interpreted by both the researcher and research participants. The case may arise when researchers finalise their analytical constructs early (Baxter & Eyles, 1997). Due to the researcher and participants having varied philosophical perspectives, there is likely to be a variation in interpretation. This can be combatted through having a supervisor overseeing and analysing the research process to make sure that it is standardised and that misinterpretation and varied interpretation opportunities are minimal (Lincoln & Guba, 1985). A supervisor was present throughout the study in the form of the research supervisor. Baxter and Eyles (1997) describes this research relationship between the graduate and professor as an auditee-auditor relationship. By managing this dependability, it ensures idiosyncrasies were minimal and that the interpretation was suitable.

3.10.4 Confirmability

By definition, confirmability is "the degree to which findings are determined by the respondents and conditions of the inquiry and not by the biases, motivations, interests or perspectives of the inquirer" (Lincoln & Guba, 1985, p. 290). Literally, this says that the researcher has not been biased in their research or interpretation. It is difficult to remove all

biases from the research process. The researcher attempts to minimise and eliminate their personal views that influence the study, ultimately the research and interviews are designed by humans and therefore, biases are inescapable (Shenton, 2004), especially when human produced data somewhat represents a subjective perspective rather than absolute objective truth. In terms of qualitative study, this is true. The researcher can observe the experience and subject of interest, which allows the researcher to draw personal conclusions and insight which can make neutrality difficult (Patton, 1999).

Due to biases in research being unavoidable to an extent, resources must be put towards mitigating personal interpretation. Lincoln and Guba (1985) believe that one should focus on both the investigator and the interpretation when analysing and assessing confirmability. To do this, it is suggested that either to have a diary kept or have the research audited externally. Baxter and Eyles (1997) suggest that more focus needs to be put towards the accountability of the researcher, most notably by ensuring the objectivity of the study. This qualitative research needs to account for the researcher's biases and motivations by actually showing how it has impacted research interpretations (Baxter & Eyles, 1997).

The methodologies of Lincoln and Guba (1985) and Baxter and Eyles (1997) were utilised to increase confirmability throughout the research. With the method of Lincoln and Guba (1985), a supervisor from the university operated as an auditor for the processes of interpretation and research. To abide by the approach of Baxter and Eyles (1997), the researcher made sure that they took note of their personal biases and made an effort to reflect on these. The researcher grew up surrounded by agriculture, having spent their whole childhood growing up on a farm. Since then they have continued to follow the industry and have a passion for sustainable practices. In this situation, this knowledge and interest in the industry works as an advantage to help understand the individual farmers and the areas that are being researched. Once the data was collected, any analysis and judgement of this was supported by reviewed literature compared to solely just the researcher's own interpretation and perspective.

3.11 Ethical Considerations

Ethical concerns are a vital part of any piece of research. Researchers need to consider any ethical issues that may surround their research (Esterberg, 2002). Ethical considerations

include individual participant treatment, ethics involved in the interview process and confidentiality and consent of identity and information of participants. To abide by these ethical requirements, a low-risk application was sent to the University of Canterbury Human Ethics Committee, which was later accepted prior to commencing any research. This confirmation can be found in Appendix 4. The ethics application primarily focused on the confidentiality of identity and consent for use of information, while also highlighting the importance of not causing harm to those involved. The requirements for a low-risk application was met with the study being solely voluntary and with interviewing of the adult participants for only a short period. Throughout this process, the safety and privacy concerns was of high priority for the researcher.

During recruitment and prior to interviewing, participants were presented with an Information Sheet to read and were also asked to read and sign a Consent Form. The Information Sheet outlined research intention, areas of investigation and the contact details for the primary researcher and their associated supervisors in the study for if they needed any information. The supervisors' details were there for if the participants did not want to contact the researcher. The Consent Form again provided the intent of the research, but also provided vital details in relation to privacy of the participant and data security. On acceptance and signing of this form, this gave the researcher permission to use the participants' interview data with the understanding that the data with security and privacy obligation of the data would be met. Participants were offered the opportunity to change or recall their data within a certain period if they decided they no longer wanted to participate. They were also instructed that due to the nature of the research the thesis would become a publicly available published document on completion, available through university databases. To enable participant confidentiality, there were measures that were put in place, this includes changing the names and any identifiers of the participants in the thesis with all data only available to the researcher on password-protected devices. The supervisor of this research will keep the Consent Forms for a period of five years. All participants consented to the research conditions and process. By taking on these ethical considerations throughout the process and due to the low-risk nature of this research, it is expected that this research has satisfied all relevant ethical criteria and has been implemented in a way that this will not be compromised.

3.12 Chapter Summary

The aim of this chapter was to provide an overview of the qualitative research methodology used to explore topics outlined in Chapters One and Two. After an initial introduction, the ontological and epistemological considerations and theoretical assumptions of this research were discussed. Following this, the methodology of thematic analysis was outlined for use in this research. The research design and sample criteria and recruitment was outlined. Semi-structured interviews were discussed next which also outlined how the data was transcribed, analysed and later proven to be of high quality. Lastly, ethical considerations around the interview process was discussed. Chapter Four outlines and explores the findings that were derived from the data.

Chapter 4: Findings

4.1 Introduction

This chapter aims to discuss the data collected from the thirteen semi-structured interviews which were conducted by the researcher to gain insight into the topics that were provided in Chapter One. From these interviews, there were eighteen participants. Thematic analysis was utilised to analyse the data which was an approach outlined by Braun and Clarke (2006). Coding initially provided background into the concept of agriculture and sustainability from the perspective of Canterbury farmers. Defining sustainability in the agriculture sector uses definitions from the interview participants; this ensures that the participants are providing information in the right context, albeit with a range of differing views. Along with this content, relevant literature is presented alongside the discussion.

Following this, four primary themes were generated through coding. This was inclusive of: prominent environmental strategies and priorities, relationship with industry body, public and sector disconnect, and telling the farmer story. Beyond this, other findings from the interviews are presented separately. These combined themes provides details into farmer perception of the industry and the public, and the importance of sustainability within the industry.

These established findings allowed the researcher to relate to existing literature in this area which helped to assess the quality of the data that was collected. The intension of this research is to create discussion and also provide further research opportunities in the future. Figure 3 provides a visual representation of the themes and sub-themes present in the research. These themes will be discussed in the remainder of this chapter.

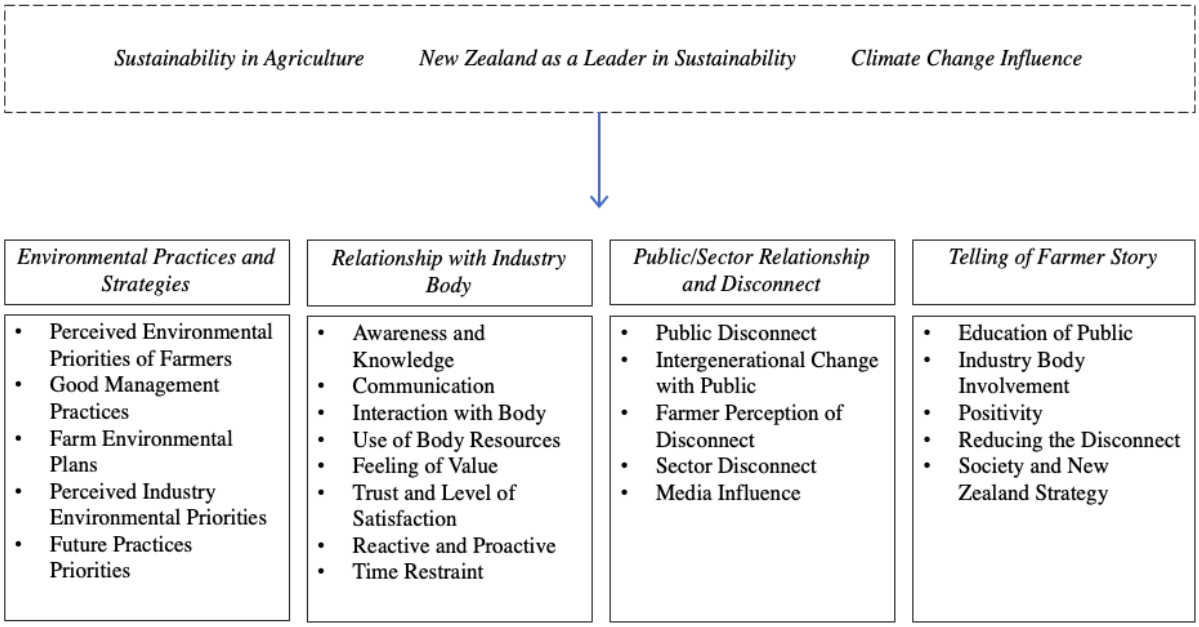

Figure 3: ***Factors Influencing Sustainable Agriculture in Relation to the Disconnect between Farmers, their Industry Bodies and the General Public (Themes)***

4.2 Background

To best understand the area around sustainability in agriculture, insight into sustainability and climate change is discussed in this chapter from interviews with participants. Alongside the initial findings from the interviews, some connection to past literature is discussed. This provides further insight into how the participants see the issue of sustainability and good environmental practices. Following this, the concept of New Zealand being a leader in sustainable agriculture and the influence of climate change is discussed.

4.2.1 Sustainability in Agriculture

From a general standpoint, sustainability is defined as meeting the needs of the current generation without impacting the needs and resources of future generations (Bridges & Wilhelm, 2008; Gordon et al., 2011; Sharma et al., 2010). Pretty (2008) highlighted that farmers need to be supported more in their technology and practices to improve sustainability within the industry. From literature, there have been a range of definitions of sustainability, with Yunlong & Smit (1994) defining it as “the use of resources to produce food and fibre in

such a way that the natural resource base is not damaged, and that the basic needs of producers and consumers can be met over the long term" (p. 299). Between farmers, the industry, and the general public the definition and the scope can differ; consequently, the concept of sustainability in agriculture may not be fully agreed upon. The concept of sustainability in agriculture is dependent on the person and is one that individuals personally interpret and relate to. There are different perceptions on meaning which were dependent on a range of factors in this study. Having a strong definition and understanding was a vital part of this research as it provided understanding of the views of participants around certain topics. An initial question asked participants what their perception was on the definition of sustainability and environmental stewardship from their own perspective and the industry itself. Overall, the responses related to the definitions mentioned previously. However, the responses also put emphasis on changes in the definition, spreading of risk in sustainability and the industries varied approach to the topic. Participants emphasised the importance and need of being able to balance the environmental and economic sides of sustainability, believing that there is a fine line between the two. On top of this, they believed in improving their environments and sustaining them for future generations. The following is a selection of the responses from the participants.

"Sustainability is about being responsible and if I was ever going to tell anyone what is a sustainable system… it's about actually being responsible with what am I doing on my land and making sure what effect it has stays on that land and not going for someone else to clean up."

(Interview with Cameron, Beef + Lamb NZ Farmer)

"Often it's the concept of leaving the land in a better state than when you took it on… Being able to have an intergenerational business is a part of sustainability. Reducing, providing for your family and community while enhancing the land asset – they are some of my terms."

(Interview with Brad, Beef + Lamb NZ Farmer)

"To me sustainability is – my high driver is people. So people come first… Because without sustainable people you won't get the environmental outcomes you need."

(Interview with Derek, Dairy NZ Farmer)

This corresponds highly with MacLeod & Moller (2006) who define sustainability in agriculture as "the use of farming practices which maintain or improve the natural resource base of agriculture, and any parts of the environment influenced by agriculture" (p. 202). The participants highlighted the importance of sustaining for future generations and reaching balance from an environment and economic standpoint. In several interviews the concept of reducing and spreading risk to be sustainable was mentioned, which is in line with Lee (2005). Risk is seen as not only reducing and spreading the risk but also making sure that it is done within the right time periods.

"I guess it's spreading your risk really, is your sustainability at the end of the day and if you can – yeah, if you can spread your risk with different risks with different stock classes, your sustainability with different fertilizer levels."

(Interview with Tim, Beef + Lamb NZ Farmer)

"Yeah a bit of risk spreading and that's the same, rather like with your crops you have different crops and having different times and that's the same."

(Interview with Paul, Beef + Lamb NZ Farmer)

MacRae et al. (1993) stated that industry leaders were often barriers to sustainable agriculture. This links to participants' perception on how the industry defined sustainability, often participants found that the industry perspective differed from the farmer. The industry has often taken a production and economic centric approach, with participants finding that they have been slow at defining the concept of sustainability and that sustainability has not always been at the forefront of what the industry bodies do.

"The industry certainly defines it as economic sustainability and endurance… and resilience. As far as economic stuff goes and environmental – environmentally, sustainability is the resource that you use from the land are replenished and it's not going backwards."

(Interview with Andrew, Dairy NZ Farmer)

"They define it by image – how you're portrayed. If you are perceived – you've got a fence around the waterway, it doesn't matter if you let the cows in there if no-one was looking. If there is a fence around there it is perceived you are doing a good job"

(Interview with Nigel, Dairy NZ Farmer)

Some discussed how sustainability had changed in the last 10 years and how it was continuing to change going forward into the future. Prominent comments related to the move to more a profitability stance. This was seen through moving to the dairy sector and the changing approach to water use in the country. Beyond this, some participants believed that changes were needed in the industry in terms of sustainability and production in agriculture. They believed that the solution may not be reducing agriculture production on a smaller environmental footprint but to actually increase agriculture production in more sustainable and low impact areas. This relates strongly with Intergenerational Change and Changing Farming Strategies which is discussed later.

"It's been seen to try and use water wisely through irrigation and through waterways being you know poor water quality and stuff like that."

(Interview with Kevin, Beef + Lamb NZ Farmer)

"In the past we have always looked through a lens – Is farming looking good when I brought the land, when I'm retiring from the land is it in a better space to when I found it, is my production better now… Now we're putting a new lens over it and saying is it looking better, is it producing better and is it leeching or losing less nutrients so I don't have to replace them."

(Interview with Cameron, Beef + Lamb NZ Farmer)

"I think the last 10 years has been a huge push towards profitability… I think there has been a lot, there has been a lot of cropping and sheep and beef convert to dairy."

(Interview with Paul, Beef + Lamb NZ Farmer)

The researcher found that participants generally had a strong understanding of knowledge around sustainability and were well aware of many different aspects in the agriculture industry. This is in line with Banerjee (2001) who found that environmental issues were becoming more important in businesses.

4.2.2 New Zealand as a Leader of Sustainable Agriculture

Participants were divided over New Zealand being a leader of sustainability in the agriculture industry. This highlighted a disconnect not only with the general public but also between the dairy sector and the other sectors. This will be discussed further later in this chapter. Participants had knowledge, experience and viewpoints on agriculture in the likes of North America, the United Kingdom and Europe. The researcher saw a strong stance on New Zealand and their sustainability in agriculture with farmers in New Zealand doing a lot in terms in this. Often the media and public do not see the amount of resources that go into protecting the environment. New Zealand's smaller population compared to other parts of the world potentially make it more accessible to action this, although places like Britain had to do this before New Zealand.

"I think a lot of countries in – well some countries in Europe they think they are probably they are further forward, regulations are probably further forward. But I don't know whether they actually are further forward. Europe is heavily over populated."

(Interview with Paul, Beef + Lamb NZ Farmer)

"We've come a huge long way – it's been absolutely incredible. The dairy industry has probably been at the forefront of the ag sectors of actually being proactive and doing stuff."

(Interview with Andrew, Dairy NZ Farmer)

4.2.3 Climate Change Influence

The general stance on climate change in the industry and sustainability was that it was something that you were not able to do much about in farming. Emphasis was put on the need to constantly adapt to the changing environment with participants seeing it as something that you just have to deal with as weather will always be a factor in the industry. Participants did not seem concerned by it because it was going to happen whether they like it or not; they just have to adopt new strategies and approaches to deal with climate change.

"I think the climate change has become a lot more prominent recently. It's an ongoing issue. I potentially can't see it going away and so it's either an opportunity or threat and we'll probably try and take it as an opportunity to see how we can develop."

(Interview with Brad, Beef + Lamb NZ Farmer)

"Everything I do is based on science. Science said there is climate change so we'll believe it until someone proves it's not."

(Interview with Derek, Dairy NZ Farmer)

4.3 Environmental Strategies and Practices

A theme emerged around the environmental strategies and practices that are present in the agriculture industry from the participants' perspective. First was the environmental priorities from farmers which related heavily to the second sub-theme of good management practices which participants saw as farmers doing the right environmental and sustainable practices naturally. FEP's are a strategy that have been implemented by the industry for farmers, which was one of the industry priorities. Finally, in environmental strategies and practices, this section looks at the perceived industry priorities and participants' perceptions on the environmental priorities going forward.

4.3.1 Perceived Environmental Priorities of Farmers

Participants were very aware of the environmental practices and initiatives which had been, and which had to be, implemented on their land. Although the participants were interviewed based on being levy payers of Beef + Lamb NZ and Dairy NZ, they were also representative of some other sectors including cropping and deer farming. Van Cauwenbergh et al. (2007) discussed how there were a range of important factors in agriculture; these were in line with what participants believed were priorities. This included biodiversity, productivity, regeneration and capacity.

Participants highlighted the importance of irrigation and water not only environmentally but also in the way that irrigation bodies work within the industry and with farmers to get the best possible outcomes. Some participants mentioned that they actually used less water with irrigation than when their properties were in borderdykes, and often had worked around existing trees or were replanting after installation. There were some views that it was the low land dairy farmers who were paying for the waterways, with the high country sheep and beef farms under the radar. The participants all had their waterways fenced. Water was seen as the central priority for the agriculture industry in terms of environmental sustainability, with all farmers having to do their part in protecting their waterways or managing their water use. Beyond this, it is an issue that the general population and government is also concerned about.

"Could we afford not to connect to the scheme, we were not sure how we were going to pay for it. I think in the long term in 20 years I think it seems expensive water and it is, but in 20 years it will seem cheap… But water is probably the major one and again it comes back to the testing of rivers and the perception of that farmers have ruined our water ways."

(Interview with Kevin, Beef + Lamb NZ Farmer)

"We brought the farm here - border rights and the amount of water we had was a certain volume, that volume we used to through borderdyking or spray irrigation used to be enough for 70% of the farm with reasonable reliability. Now what we are doing is we are using the same amount of water over all the farm with much better reliability."

(Interview with Cameron, Beef + Lamb NZ Farmer)

Effluent has huge importance in the dairy sector. With water use and waterways being fenced, effluent is a major driver in environmental sustainability. Participants were very proactive in making sure they follow the regulations with one participant about to spend $100,000 to upgrade their effluent pond and system to stay on top of the regulations. Andrew stated that only around 5% nationally are not fully compliant.

"Increasing the input we can put the effluent over and then also have enough storage that we don't have to do it in wet weather."

(Interview with Arthur, Dairy NZ Farmer)

"I'd say doing your effluent properly… Getting it out regularly instead of letting ponds overflowing and people putting them on straight after the rain or in the rain and yeah doing it properly and doing it when it should be done, doing it regularly and putting the right amount."

(Interview with Jack, Dairy NZ Farmer)

An increasing concern in both the sectors is nitrogen leaching and the use of fertilisers. Participants saw leaching into waterways as an escalating problem with nitrogen use being an ongoing issue in the industry. Beyond this, participants also emphasised how wintering of stock is becoming more of an issue with something needing to be done to improve the welfare of the land over winter. Many participants also had issues with Overseer, a monitoring program used in the industry to help and improve nutrient use on farms.

"Trying to use the least amount of fertiliser as we can to grow the grass we need… Growing crops that can help us grow the stock as fast as we can… Got 17 different soil types across the farm so we are trying to put the best part of the farming system on the right soil types."

(Interview with Cameron, Beef + Lamb NZ Farmer)

"You look at winter grazing, there are massive challenges welfare wise and environmentally wise and sediment, nitrates, phosphates."

(Interview with Daniel, Beef + Lamb/Dairy NZ Farmer)

"Putting back in the soil as much as you are taking from it – soils probably the single biggest factor environmentally in what we are doing farming… Our biggest downside and our biggest issue to tackle is cows over winter."

(Interview with Paul, Beef + Lamb NZ Farmer)

A struggle environmentally for the industry has been the use and disposal of plastic and waste. Many participants were struggling with what to do with waste but often found they had done their part and it was up to the regulators and governments to create a long term solution to the waste problem. Participants found silage wrap to be one of the largest sources of waste in the sector.

"A lot of plastic and stuff that we need to – all the silage wrap, that's a huge issue for me"

(Interview with Arthur, Dairy NZ Farmer)

"We've done our bit. That's up to them to sort what happens to it after that and that's more a government lead thing I think."

(Interview with Shirley, Dairy NZ Farmer)

An ongoing issue in the industry has been the long term factors. There is increased importance with biodiversity, trees, and planting (including riparian planting). Participants believed that there had also been a push in biodiversity and planting with climate change through the ETS (Emissions Trading Scheme). Horrigan et al. (2002) agreed with this, placing huge importance on a long term approach to sustainability and farming systems. The issues of climate change and carbon emissions have also been topics that have been reiterated by the industry and farmers, with many issues in the industry coming from these. One of these issues is also the environmental cost of transporting goods to the end consumer.

"The primary focus recently has been protecting and enhancing the remaining biodiversity on the property… It's a little bit harder in some parts of the country than others. In this sort of environment, we've still got a bit so it works alright."

(Interview with Brad, Beef + Lamb NZ Farmer)

"We're thinking a lot about climate change in the sense of agriculture and the ETS."

(Interview with Laura, Beef + Lamb NZ/Dairy NZ Farmer)

"It goes from here, it has to be transported from here to the processor, has to be processed before it's in a supermarket."

(Interview with Paul, Beef + Lamb NZ Farmer)

4.3.2 Good Management Practices

Several participants mentioned how good management practices shape how they work in the environmental space. This relates directly with the environmental priorities of farmers, which are said to be done naturally through farmer knowledge and awareness, or through dictation from irrigation companies rather than through the governing industry bodies Beef + Lamb NZ and Dairy NZ. Participants highlighted how it directly related to sustainability and involved recording what is happening on farm, product placement and timing of product placement. Emphasis was put on the importance of learning from what other farmers are doing rather than what the 'policy' workers are saying they should do. Yunlong and Smit (1994) also discussed the importance of good management practices and believed that farmers needed to adapt to be sustainable and reduce their environmental impact.

"A lot of us, a lot of it now, we get dictated by through the irrigation company with our nutrient budget and our things like that… and get you audited on that and all those sort of things. So there are some pretty tight restrictions that we have to follow now."

(Interview with Kevin, Beef + Lamb NZ Farmer)

"Look the good management practices stuff. That's why I'm a strong advocate for it because a lot of those practices have been checked by farmers for farmers."

(Interview with Cameron, Beef + Lamb NZ Farmer)

One participant stated that the resources of the industry were stretched in relation to providing support for farmers in good management practices which in turn makes it difficult for fast improvements to be made.

"There is a lot of resource needed but we've not got the capability or capacity anywhere yet in the ag sector as far as consultants go, people who can prepare these things and people who can give good advice."

(Interview with Andrew, Dairy NZ Farmer)

4.3.3 Farm Environmental Plans

FEP's have been found to help increase awareness around environmental sustainability. Beef + Lamb NZ have committed to have all farms having one by the end of 2020 (Beef + Lamb New Zealand Ltd, 2017a). The participants generally found that it was their irrigation companies and advisors who were pushing it rather than the industry bodies or Environment Canterbury.

"But yeah the benefit of a FEP is that it makes you think about a whole lot of aspects of your operation to do with the environment that you normally wouldn't think about."

(Interview with Andrew, Dairy NZ Farmer)

Farmers have found that it is something that needs to happen looking into the future. They believe that if they do not do it they will not have access to their water, and the government and regulations would prevent them from operating. Although it is found to raise awareness and make farmers think about their practices and what they are putting onto their properties, it has been seen as a 'ticking the boxes' exercise and has increased the amount of paperwork and off-farm work which is a struggle for those who lack knowledge and support in that area.

"Because if we don't get on that wagon they're just going to shut farmers down and then they're going to start giving fines out."

(Interview with Tim, Beef + Lamb NZ Farmer)

"It's actually mainly about thought process, or what comes in when you're making the decision – what are the boxes in your mind that you're ticking off, you're doing or making sure your staff are doing."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

4.3.4 Perceived Industry Environmental Priorities

This research found that there is a disjointed view from a farmer's perspective around the priorities of the industry bodies. The industry bodies are seen to have a range of different priorities, which is partly due to the varying level of involvement they have with their levy payers, including the participants. Beyond this, the industries seemed to have different takes on the environment, although water was seen as a common factor among both of the industries. Overall, they are perceived to be covering a wide range of environmental areas in agriculture such as biodiversity, waterways and carbon emissions. Some participants did mention a level of improvement and reactiveness from the industry bodies which is something that is covered later in this chapter.

*"*Beef and Lamb *have long worked on the clean green New Zealand image and so it's their upmost relevancy that they do try and keep a hold of that… They ticked all the boxes of what the government to their industries said over the last couple of months… But the rest it's all empty promises – there is no, all they've said is we need more time."*

(Interview with Paul, Beef + Lamb NZ Farmer)

"Some of it is overdone and unnecessary and it's just keeping somebody in an office happy… But I think the on farm stuff that we're doing – I think that's fantastic."

(Interview with Shirley, Dairy NZ Farmer)

4.3.5 Future Practice Priorities

This leads on to what participants see as the future priorities for the industry in the environmental space. The interviews highlighted that industry and environmental issues are becoming a dominant topic in the media and in the country. Participants saw that the waterway issue was nearing resolution and saw greater risks in the likes of biodiversity, stocking rates and the leaching from the soil. There seemed to be some uncertainty around where the industry was headed, especially with the restrictions and regulations that are implemented by the government and industry bodies. From this, the researcher sees a need for further collaboration between the different parties.

"It's going to be interesting going forward – the farming the paradigm of buy land, develop it and increase your stocking rate – lock in the capital gain – do it again."

(Interview with Brad, Beef + Lamb NZ Farmer)

"How are we able to spread the footprints of all those cows over the whole region… It's about how do we share the burden."

(Interview with Paul, Beef + Lamb NZ Farmer)

For the industry to continue developing and prospering into the future, participants think there needs to be greater support for the younger generation because it is becoming more difficult to raise enough capital and resources to farm sustainably. This is found by Lee (2005) who believed that the industry needed to move away from solely innovation and need to put resources towards skill development and learning opportunities. Pretty (2008) also found that more information and a greater management skillset were needed to improve sustainable agriculture, with the industry bodies needing to be the driving force behind this.

"What Fred and I are really enjoying at the moment is being closer to the end of our career, having you guys coming in – just been through or still in the middle of your education and coming with a whole new different skillset and knowledge than we had until now. And combine these two and set up the discussion about how you guys see the future and how we see the future and what comes from there. I reckon it's very interesting."

(Interview with Sandra, Beef + Lamb NZ Farmer)

"You were the new generation on this farm business and we have huge challenges to pass it on to the next generation."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

4.4 Relationship with Industry Body

This theme discussed the participants' relationship and interaction with their industry body. Firstly their awareness and knowledge, and the level of communication between them was discussed. This section then went into more depth around their interactions, including their use of body resources. Finally, discussion was held around what their thoughts were on the industry body from the feeling of value that they had, whether they trusted them and were satisfied with what they do, whether the industry body was seen as being reactive or proactive, and whether or not time restraint impacted their relationship.

4.4.1 Awareness and Knowledge

During this research a range of farmers were interviewed. Those farmers who were heavily involved with industry and regional organisations on the board tended to have greater knowledge of the environmental priorities and direction of the organisations. The 'average farmer' from these participants' perspective were not believed to have knowledge of the different goals and strategies of the industry bodies or knowledge of the levy allocation. Most participants had an understanding of some of the projects and initiatives that the industry bodies were a part of. They were often content getting the job done on their properties. They found

there was already a lot of paperwork and information coming their way and they wold rather do all the jobs they have to do on their farms instead of reading into the bodies priorities.

"To be quite frank, probably not no. So – I don't know exactly the goals are, what their long term goals are… I don't know if I could repeat what I have been told."

(Interview with Ray, Dairy NZ Farmer)

"If you asked me if the average farmer knows where the levy goes – they would probably struggle, even though I would know."

(Interview with Andrew, Dairy NZ Farmer)

"Probably don't take too much notice of it. It just gets deducted and I guess you just. I probably think that that I hope that it's being used wisely… I just really want to be able to sit back and farm and enjoy it without getting too involved."

(Interview with Kevin, Beef + Lamb NZ Farmer)

Participants stated that they felt they were already being environmentally sustainable, therefore there was no need to follow the organisations as intensively and would instead rely on other publications for information. Often farms had their own environmental goals. Smith and McDonald (1998) discussed how in determining sustainable development levels, the indicators of awareness and satisfaction around sustainability and agriculture was an important indicator for sustainability.

4.4.2 Communication

Communication between the industry bodies and farmers is important for reducing any disconnect that may exist between not only the bodies and farmers, but also the government and general public. Participants generally heard from the organisations but often it was not direct but through other publications. Although communications were received by participants,

sometimes it was not relevant, was received through the wrong distribution channels, or came at inconvenient times. Andrew believed that it was important for farmers to reach out themselves and go to discussions as that was the best way to get a response. One levy payer of Beef + Lamb NZ through their winter lambs do not receive any communications from Beef + Lamb NZ.

"Countless forests have been cut down to try and communicate and now digitally – it's a real absolute challenge to communicate to farmers and the public."

(Interview with Andrew, Dairy NZ Farmer)

"Yeah it's a hard one because farmers who do want to get off will go to these days but it's trying to get the ones who don't."

(Interview with Tim, Beef + Lamb NZ Farmer)

"That information flowing through, are they specifically targeting us? No… It's the whole - I don't think anyone really knows where the information is coming from."

(Interview with Robyn, Beef + Lamb NZ Farmer)

Participants, including Shirley, emphasised the importance of having field days and events that were relevant and accessible for farmers. Sometimes these events were not at times that suited and was focused around industry representatives rather than farmer interaction.

"A lot of farmers are happy to talk amongst farmers in a discussion group but if you've got a lot of reps and agents and all those other people there as well – that you don't actually know."

(Interview with Shirley, Dairy NZ Farmer)

4.4.3 Interaction with Body

Following on from communication, participants who had irrigation on their properties had more involvement with the irrigation companies than the other industry bodies such as Beef + Lamb NZ and Dairy NZ. MacRae et al. (1993) found a disjoint between what agriculture organisations did in their activities and what their goals were around agriculture and sustainability, with corporate greening being a part of this. Participants found that in interacting with the bodies, you have to sometimes be proactive and actually contact the bodies if you want to get involved or share your opinion as they often do not have enough resources to interact with each farm individually. Although there are a range of events and field days for farmers to attend, there were limiting factors including lack of time, proximity to farm, and the style of these events. Clearer and simpler communication around events and resources would greatly benefit the farmers and the industry.

"If you put your hand up though they'll come and help you."

(Interview with Tim, Beef + Lamb NZ Farmer)

"If you want an organisation to travel in a direction of travel you feel interested in travel - then you have to be involved."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

"I think we're probably at an advantage. We're with one of the irrigation schemes and I think as much as industry bodies are doing it, the irrigation schemes are doing a lot of good for the environmental push."

(Interview with Paul, Beef + Lamb NZ Farmer)

4.4.4 Use of Body Resources

Beyond the communications, events and workshops that are provided by the industry bodies, there are a wide range of online resources that are available for farmers. A range of resources

were found to be available for participants to utilise, although often what was available was duplicated and in multiple locations. Participants found the Dairy NZ website more accessible and easier to navigate than that which was provided by Beef + Lamb NZ, although now a new website has been introduced (Beef + Lamb New Zealand Ltd, 2019). Participants found that there was a diverse range of resources online, although often they did not have time to access it or did not know the wide range of resources that were available to them. Many participants were aware of the resources but some of them found restrictions with using the resources due to technological challenges and lack of understanding. Wollni and Zeller (2007) highlighted that there was shown to be benefits to participating and interacting with cooperatives and organisations.

"Just when on a need to basis or something pops out of it that interests I will go."

(Interview with Robyn, Beef + Lamb NZ Farmer)

"Yeah sometimes Dairy NZ stuff sometimes. They have some quite good links to things that I have used in the past when I've needed stuff… Yeah and it's easy to find on their website."

(Interview with Jenny, Dairy NZ Farmer)

"No I don't. I should do but I don't… Yeah I'm pretty bloody hopeless on computers. I need to actually get. It's a time thing to be honest."

(Interview with Arthur, Dairy NZ Farmer)

4.4.5 Feeling of Value

There seems to be some discrepancy between participants over the level of value felt from their contribution to the industry bodies. Some participants felt that there was not adequate value in some of the services the industry bodies offered, citing that it needed to be relevant and add value to their business. Part of this is due to the changing politics of the country, but also there is the issue of the bodies trying to please all of their stakeholders which is often not possible.

Primarily dairy farmers worked extensively with their suppliers Fonterra, Synlait and Westland Milk.

"So industry I would have said are a lot slower to adapting to it than what many farmers but there are a lot of farmers at the forefront.…But they really got to be relevant and add value to a business and from time to time you wonder how much value they are adding to my business when they are off doing marketing."

(Interview with Cameron, Beef + Lamb NZ Farmer)

"They've got much more chance shifting the more forward looking farmers, the other ones you can put a huge amount of work and resources towards them and you'll still get nowhere… I'd personally be happy for them to focus on the more progressive and interested farmers.

(Interview with Brad, Beef + Lamb NZ Farmer)

4.4.6 Trust and Level of Satisfaction

There was a varying level of satisfaction with the industry bodies but generally they were seen as trustworthy. This is partly due to the fact that participants believed that there had to be a high level of trust because the bodies were not there to be destructive and unsupportive to the industry. There was a potential sense of distrust with the 'Taste Pure Nature' branding by Beef + Lamb NZ with some farmers believing it should not be the industry bodies leading this. Although participants were often not interested in what the bodies do, or did not utilise what they had on offer, they still seemed to trust them with what they are doing for their sector and wider industry.

"Yeah there is good trust… You're going to have the outliers that are not quite the people, they are always going to hate Dairy NZ and they are going to hate Fonterra."

(Interview with Derek, Dairy NZ Farmer)

"So yeah I think they have got our interests at heart. Is it totally focused at the right amount at the right time? Not sure that they totally understand that at times."

(Interview with Cameron, Beef + Lamb NZ Farmer)

Even though trust was high with the industry bodies, there was varying levels of satisfaction. Although the industry bodies provided a lot, there is a need for improvements with many participants wanting different resources and priorities. The researcher found that this was common among all participants, with many wanting more intimate events. Bernard and Spielman (2009) emphasised how smaller farms and farms that took different approaches to farming and their practices faced different challenges and often had a lack of support. This is in line with what Jenny found, as she is not a grass based operation.

"I don't think they have very broad understanding of different systems on dairy farms. I think they are very set in their ways on what they are portraying."

(Interview with Jenny, Dairy NZ Farmer)

"Saying that they're cow numbers – I think from the 1990s have dropped, and their ewe numbers as well. Because their total stock units have dropped, they're being environmentally – but for me that's just passing it on from one industry to another."

(Interview with Paul, Beef + Lamb NZ Farmer)

"The industry are not very good at recording what is going on… Yeah I'm not entirely convinced about the brand thing, why, what they're doing vs what the meat companies are doing."

(Interview with Cameron, Beef + Lamb NZ Farmer)

4.4.7 Reactive and Proactive

In general, the dairy industry is being seen as proactive within the agriculture industry. This is seen not only from the dairy farmer perspective but also from Beef + Lamb NZ farmers that were interviewed. Participants see it as a move from being reactive to now being proactive, with the government having greater involvement and putting more pressure on the industry. The researcher found that this showed a slight disconnect between the sectors, with the sectors seen as only becoming more proactive in recent years. Beyond this it was seen that often the industries were trying to go further ahead than what even policy and regulations were requiring.

Yeah, I definitely think they are getting more proactive now. If you probably asked me that ten years ago I probably would have said they are more reactive.

(Interview with Robyn, Beef + Lamb NZ Farmer)

"Well it's getting more proactive – in the early days it was totally reactive."

(Interview with Andrew, Dairy NZ Farmer)

"They are now in the space of – yes, farming needs to change, or is changing. We need to control the speed of change and also try and reengage with the general public about what we actually do."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

"Coming out to New Zealand it was just like heaven here because you didn't have the risks, anything could do just whatever you wanted to do – but they are catching up… I have a feeling at the moment that setting rules and regulations, that as long as it is the good of the environment, that's okay – but you don't want all sorts of rules and regulations just to have the regulations."

(Interview with Sandra, Beef + Lamb NZ Farmer)

4.4.8 Time Restraint

A factor that participants struggled with when communicating and interacting with the industry bodies was the time restraint that was present. When wanting to attend workshops, discussion groups and field days, often participants were restricted due to the time of day that these were on and the distance that was needed to travel to get to participate. These findings also showed that the reason interaction was not greater, or that access to resources was limited, was due to the restricted time that participants had available to them. One stereotype that Tim discussed was how the farmers were often the ones who do not get away from their properties, which made it difficult. Cameron and Daniel both mentioned that there is so much time spent away from the farm as it is, making it more difficult to attend more even if they wanted to. The researcher found that dairy farmers struggled more finding the time to go to events, partly due to their working hours but also due to the inflexibility of the industry bodies and when and where they offer their events, with events readily available but not accessible for most farmers.

"We could be at field days once a day every day of the week if we wanted to."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

I'm sort of more hands on… Yeah, it's just, you could spend a day of the week in the flipping office now, it's turned into that sort of type of farming."

(Interview with Arthur, Dairy NZ Farmer)

4.5 Public and Sector Relationship and Disconnect

Throughout the interviews, it was clear that there was not only some disconnect between farmers and the industry bodies, but also with the government and the general public. This section expands on this. Firstly the public disconnect was discussed which expanded into the intergenerational relationship change between farmers and the public and the participants perspective on the disconnect. After this, a sector disconnect was highlighted between the dairy industry with the sheep and beef industry. Participants emphasised how the media had been detrimental in portraying the agricultural sector to the nation.

4.5.1 Public Disconnect

From this research, it is clear that there is a disconnect between those in agriculture and the general public, going beyond solely a disconnect between farmers and the industry bodies. Participants generally found that there was a strong disjoint present and it was something that had increased the past 10 years. Generally the dairy sector was which was impacted by the public, partly due to their proximity to urban areas and the perceived level of wealth that they have. In saying this, some participants found that our public disjoint is actually improving or it is not as disjointed as other countries. Sharma et al. (2010) believed that the general public was often disconnected from the supply chain and the sustainability occurring. The researcher found that the general public disconnect with the agricultural sector was increasing, and this topic was prominent in all interviews. This is often not due to the truth but due to the perceived truth of the general public, lack of rebuttal from industry bodies and the negative media influence.

"There is probably a misconception about what actually does go on farms and what environmentally farmers are invested in."

(Interview with Ray, Dairy NZ Farmer)

"We're very visible - you know, we're very visible."

(Interview with Andrew, Dairy NZ Farmer)

"The amount of rubbish, yeah rubbish – pure lies that you hear about the agricultural sector and that is all industries from dairying to cropping to horticulture, the sheep and beef - the lot of them."

(Interview with Paul, Beef + Lamb NZ Farmer)

Participants also highlighted that New Zealand was actually not as bad as Europe and other regions. They perceived that the general public often only saw what they wanted to see, and had not been exposed to other regions and industries. This displayed how the general public

often do not see everything that happens in the industry and how they tend to have their own image on how the agriculture sector should be operating without extensive knowledge. It was found that often it was the minority who were the most vocal and who were the people causing the most problems. Pretty (2008) discussed how agriculture is a unique sector where the sector directly impacts the assets it relies on; this highlights how sustainability is a key issue in the industry. The researcher perceives that this is a big issue that the industry has with the public, who quite often might not understand this issue.

"There is actually less water used now than with the borderdyke. They didn't know that because they didn't notice it… Being aware and needing that little bit of more explanation."

(Interview with Sandra, Beef + Lamb NZ Farmer)

"I just think it's that minority – you hear so much about the minority. Maybe the average townsperson doesn't mind it. But they start brainwashing the people too."

(Interview with Arthur, Dairy NZ Farmer)

4.5.2 Intergenerational Change with Public

A common theme throughout the interviews was the intergenerational change with the public. Findings show that the urban population had a decreased amount of relation and interaction to those that are farming and involved in the agriculture industry. Participants who had moved to New Zealand had found a deterioration with the generational connection. The participants also thought it was important to get more positive stories out to the general public and wanted to get them on to farms. This will be discussed later in the study.

"A lot of them my age generation in town growing up probably had a grandfather or an uncle or a cousin or something that had a farm somewhere and they might have spent a holiday or go and visit at a weekend… Whereas now we're probably starting to get 2 generations on from me also, and there is such a disconnect."

(Interview with Kevin, Beef + Lamb NZ Farmer)

"Every person that lived in the city was one connection away from having, from knowing someone from a farm."

(Interview with Robyn, Beef + Lamb NZ Farmer)

4.5.3 Farmer Perception of Disconnect

There is a perceived level of distrust between farmers and the general public. Participants often found that they were unable to be open with the urban population due to the lack of understanding and backlash that they would get and felt that the repercussions were often not worth the risk to their business. The researcher believed that there were large risks for farmers who wanted to open up their properties to the general population, not wanting to do so due to public lack of understanding on how the agriculture industry works, the huge costs involved and the stretch and variability of resources that they have.

"We've got urban who have been throwing rocks at us, we've closed our gates and haven't opened them up. So now they don't trust what we do in behind those gates."

(Interview with Cameron, Beef + Lamb NZ Farmer)

"The general public see money being made in the agriculture industry. As in any business, generally when people start business, when they have a business – money is made. I think some people struggle with that concept."

(Interview with Paul, Beef + Lamb NZ Farmer)

Participants find that the general public do not fully understand the costs and pressure involved with an agriculture operation. Due to their perception of this, participants are unsure about the general population seeing and learning about the industry because of the backlash that there could be on their farm. Going forward, this suggests that the public needs greater understanding regarding what goes on in the industry and how the industry operates.

"No stay away because I don't want you to cause trouble on the home front even though I'm trying my best and trying to do my best for my stock and the farm."

(Interview with Robyn, Beef + Lamb NZ Farmer)

"If we start saying anything, all of a sudden as soon as they hear that sort of money they will say – well they must be rich to be able to spend that. No matter what you say it gets twisted a different way"

(Interview with Shirley, Dairy NZ Farmer)

4.5.4 Sector Disconnect

This research has shown that there is a potential disconnect between the different industry sectors. Some participants see the dairy industry as ahead of the game, which is a point that came across from both sectors, but prominently from Tim and Brad who are both beef and lamb farmers in Canterbury. The researcher sees a need for potential collaboration between the sectors in the future, which is discussed later. The industry needs to have the same stance on the issues that are facing the sector. Not only do sectors need to work together, but they also need to work with other governing bodies throughout the country.

"Credit to the dairy boys; they are way ahead of the game in every aspect of farming… The problem is the sheep and beef fellows don't want to be seen with the dairy guys."

(Interview with Tim, Beef + Lamb NZ Farmer)

*"*There seemed to be a lot more working together with conservation groups and farmers in both Europe and the States. Where NZ is very much antagonists – entirely you or me*."*

(Interview with Brad, Beef + Lamb NZ Farmer)

In saying this, this some Beef + Lamb NZ farmers felt that the dairy industry was actually difficult to work alongside and they felt that the dairy industry was not following the right environmental and sustainability approach. Paul and Fred had a strong stance supporting this, stating that the 'grass fed' approach of the sector was detrimental to the environment and that profitability had taken too much control of the sector. The study found that participants often acknowledged that the dairy farmers were seen as being more visible and vocal than the other sectors.

The dairy industry from our eyes has been profit first and environment second over the last number of years… Yeah, and if you looked at it in a sense of the overall public – Beef and Lamb still is seen as the gentleman."

(Interview with Paul, Beef + Lamb NZ Farmer)

"That's our frustration. They are not open to really improve things because they are arguing that otherwise we would lose our economic advantage."

(Interview with Fred, Beef + Lamb NZ Farmer)

Often the perception of the industry was actually due to the organisations that are working in the industry, rather than the farmers themselves. These organisations need to prove more to the farmers, government and the general public around what they are actually doing.

"It's New Zealand's largest company and the media just want to knock it down all the time. I mean when do we hear – look at the sprays and chemicals that you pour on your crops."

(Interview with Arthur, Dairy NZ Farmer)

4.5.5 Media Influence

A consensus among participants in this study was that the media plays a prominent part in damaging the reputation of the agriculture industry and the rural communities. The participants felt that the general public believe what the media are saying, and in turn make the generalisation that the whole of the sector is doing with all farmers wanting to degrade the natural environment, biodiversity and their stock. Often it is only the minority who are being more vocal, which is further backed up if those involved in the media are not from an agricultural or rural background. The researcher believes that a more positive and evidence based approach from the media would have a positive impact on the industry and actually decrease the public and industry disconnect. Daniel emphasised how the media is actually a contributor to the health and wellbeing of the industry.

"Yeah probably just trying to stop the media getting out of control. Because that's where it's all starting from."

(Interview with Jenny, Dairy NZ Farmer)

"If you read the opinions on your Stuff app – which I do every now and again, you become suicidal in a very short period of time."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

"The general community's idea about dairy farmers is actually a lot more positive than the newspaper is and the internet and stuff and so on."

(Interview with Andrew, Dairy NZ Farmer)

Some participants felt that the media was only interested in negative news and was not willing to share positive stories even if they were sent to them. Often the negative stories were the ones that would reach and attract a wider audience.

"I suppose it's taking up those offers that they are getting from people because there are people who want to prove that they are doing the right thing."

(Interview with Jack, Dairy NZ Farmer)

4.6 Telling of Farmer Story

A reoccurring theme throughout the interviews was the theme of telling of farmer story. Participants saw it as highly important to let the general public know what they were all about through sharing their story. This includes through education of public, involving the industry body in the process, and expressing positivity. Beyond this, in telling the story, participants believed that this would reduce the disconnect with the general public. They also see it as important for society and New Zealand going forward.

4.6.1 Education of the Public

The telling of the farmer story and educating the public was a theme that reoccurred throughout the interviews. This arose due to the consensus that there is a disjoint between the public and the agricultural industry. Participants wanted to educate the public on all the positive and proactive activities and strategies that the farmers are doing, rather than focusing on the negativity that is fuelled by the media. Derek highlighted the importance of telling stories "With everyone, yeah you've got to tell your stories". Ray emphasised that it is important to display the good approaches happening to decrease the rural and urban divide "I think we are doing things right, let's shout about it". Even though there were huge revenues involved in the industry, participants believed it was important for the public to understand the huge costs and inconsistencies that the industries have to deal with. Regardless of whether the farm is organic or sustainable, they still have to make money and make enough money to continue operating.

"That's the biggest message, it's in our interest too. We live here, we're in the environment, we do want to swim and fish in the rivers and we want to go boating."

(Interview with Ray, Dairy NZ Farmer)

"We've got to educate the urban side, the townies, we need to educate them on how we do stuff… they've also got to want to be able to learn."

(Interview with Tim, Beef + Lamb NZ Farmer)

"You can never tell the story too many times… Are we trying to tell the story too much for farmers when we should tell it to the markets or actually our own population."

(Interview with Cameron, Beef + Lamb NZ Farmer)

4.6.2 Industry Body Involvement

In telling the farmer story, participants believed that it is important for the industry bodies to drive the process. Paul found that getting the public involved is actually quite difficult and is one that the industry bodies struggle with "I think they do try, it's just a really tough one to get around". Participants felt that a role the industry bodies need to be playing is actually combatting the media and representing the farming community more. The researcher believed that having industry backing is vital for being able to educate the public as the farmers do not have the resources to do it on their own. On top of this, industry involvement is needed to reduce or put a stop to the media getting out of control.

"They probably need to prove to the public more that it's – the dairy farmers get blamed a lot for a lot of stuff and they probably need to prove to the public a wee bit more."

(Interview with Jack, Dairy NZ Farmer)

"They need to take not a bit more control, but lead the way quite heavy. Because that is how the urban side see it… Go and ask anyone – they would have heard about Beef and Lamb"

(Interview with Tim, Beef + Lamb NZ Farmer)

"We've got to try and start really showcasing the good operators out there and the ones that are doing all the right things… At least display what we are doing. Have some figures."

(Interview with Ray, Dairy NZ Farmer)

Often it was seen to be difficult getting the industry bodies and organisations involved due to the risk that the public would see it as a big New Zealand business just promoting itself when really they are trying to reduce the rural and urban divide and control the media and government intervention. Bridges and Wilhelm (2008) highlighted the importance of a 'sustainable worldview' and believed that organisations as well as the government need to get behind and support individuals and businesses in sustainable practices.

4.6.3 Positivity

Leading on from education and industry body involvement, participants felt that more positivity was needed in telling the farmer story to the public. Beyond this, it is something that is beneficial for both the public and the farming community. Ray believed that farmers need to keep positive throughout their operations, regardless of what the media and public perceptions are. Participants believed that farmers needed to be positive and they had to address the issue head on rather than ignoring it or trying to fight it, especially as there are more urban residents.

"They won't look at the positives… Our marketing needs to improve hugely, our good stories."

(Interview with Sandra, Dairy NZ Farmer)

"Then they feel a bit better about themselves because they are proud of what they've got to show off... It's probably a win-win really, educating and getting the bastards who won't get off the farm to feel good about themselves."

(Interview with Tim, Beef + Lamb NZ Farmer)

4.6.4 Reducing the Disconnect

Participants highlighted the importance of reducing the disconnect with the industry and with the public. Participants feel that it is a disconnect that is difficult to comprehend and to take action to change, with many believing it is one that would be difficult to reduce. All parties need to get involved and action change for success and positive outcomes to occur. Moving forward, the researcher saw a real need to decrease the disconnect that is occurring in the industry. They see a need for the government and public to be on the same side as the industry. Although there was an element of farmers also having to change their reactions and approaches accordingly, as well as have more industry support from the bodies and organisations.

"Independence and trust. That's the only way to get through to the general populous."

(Interview with Cameron, Beef + Lamb NZ Farmer)

"Just communication and that's – you know – we've got to communicate really well, not be arrogant around it… Ok yeah, we affect the environment but hey so do you guys… We're all in this together and I think slowly, surely that's happening"

(Interview with Andrew, Dairy NZ Farmer)

4.6.5 Society and New Zealand Strategy

Part of the issue with the public and the industry seems to be with the way the government has been run. Andrew believes it has been detrimental having a government term that is only three years and emphasises that New Zealand has to create a strategy to move forward. Due to the recent government elections, some farmers believe that their reputation has been damaged.

Andrew stated that the industry was struggling with having to work with a new cohort of ministers and found that farmers struggled with the way they were treated during the elections. Andrew also emphasised the struggle that the country has with the short election period, believing it is detrimental to creating our country's strategy and plan. There is a need for longer term plans and policies that are implemented through different governments. Sharma et al. (2010) emphasised that everyone had to work together in making environmental decisions, seeing it not just as a consumer, business and government initiative, but one that the whole country needs to follow.

"Where is the strategic plan. Where is the strategy for New Zealand going forward? I don't see one."

(Interview with Andrew, Dairy NZ Farmer)

"I just don't know what else we can do to – you know. A lot of our politicians are now not from a farm or have very little agriculture involvement and I guess that's just the nature of the two million population in Auckland."

(Interview with Kevin, Beef + Lamb NZ Farmer)

4.7 Other Findings

Outside of the general themes of the research there were other findings that provided insight for further research and understanding of sustainability and the interactions in the agriculture industry. The aim of the industry body was important as it provides insight for the researcher on the participants' thoughts on what they thought the main purpose for the industry body was. With participants emphasising the need for industry body collaboration, this highlights an important position, having all sectors in the industry working together to combat the issues and backlash that the industry faces rather than facing it individually. Finally, environmental outlook supports the findings around farmers' and their interest and knowledge of environmental practices and sustainability, highlighting that the environment is something that they think about and action in their business.

4.7.1 Aim of the Industry Body

Participants had diverse views on the overarching aim of the industry bodies. While some were fully aware of what the purpose of them were, others didn't have a full understanding on what they did. This is partly due to many participants wanting to get on and get the work done that was needed on the farm. Participants saw the industry bodies as firstly trying to be economically sustainable, but also there to provide research, advocacy, support, trade access and marketing. Participants in the dairy sector found that Dairy NZ was very production and export focused, with some seeing the industry as very grass fed focused.

"I think their primary focus is to supply stuff, all sorts of different stuff that the farmers need because the farmers are paying."

(Interview with Jack, Dairy NZ Farmer)

"Well Dairy NZ's primary focus is sustainable profit. So it means that farms are profitable but working within an environmental limit."

(Interview with Andrew, Dairy NZ Farmer)

"Helping farmers to improve the area that they are in… to do better in their production wise and their environment sustainability and public perception of farming really I suppose so."

(Interview with Robyn, Beef + Lamb NZ Farmer)

"Making more money than they take in levies. So they're meant to be enhancing your return, so for that they can help the productivity of improving trade access, advocacy and some of that sort of stuff and part of the whole mixture will be making sure our markets, that they are sustainable and doing the best we can with climate change going forward."

(Interview with Brad, Beef + Lamb NZ Farmer)

Participants also saw huge importance in the industry bodies promoting the likes of their discussion groups and farm talks. They believe this should be the primary aim of the industry, getting farmers off farm, interacting with one another and learning how to move forward into the future. Tim emphasised this as being important to potentially improve the mental health of the farmers.

"Getting farmers off the land is key for their mental health I would have thought… It gets them talking and then they feel a bit better about themselves because they are proud."

(Interview with Tim, Beef + Lamb NZ Farmer)

4.7.2 Need for Industry Body Collaboration

A theme that emerged from participants was the need for collaboration between the industry bodies in the different sectors in New Zealand agriculture. This includes Dairy NZ, Beef + Lamb NZ, Foundation for Arable Research (FAR) and Irrigation NZ. This was a potential disjoint between farmers and the industry bodies, with farmers believing that the bodies need to do more to support each other and the industry. Often the Beef + Lamb NZ farmers do not want to be associated with the dairy farmers due to their perceived impact on the environment and disjoint with the public. Daniel believed that more collaboration was needed at a board and chair level to start the improvement while Cameron found that in telling the new agriculture story, it had to be all the sectors working together to do so. This is related to the need for industry involvement, with potential for the industries to better get involved with farmers, governments and general public by working together. Fischer and Qaim (2012) and Barham and Chitemi (2009) emphasised the importance of having partnerships and collaboration for sustainability in the agriculture industry.

"Probably not enough collaboration. There are different levels of collaboration… There is probably animosity between the dairy and the beef/sheep sectors."

(Interview with Daniel, Beef + Lamb NZ/Dairy NZ Farmer)

"If you could get involved with a dairy farm… I reckon they are in another league to sheep and beef, we're still playing catch up – those fellows just powering in front."

(Interview with Tim, Beef + Lamb NZ Farmer)

With the changes in the distribution of the sectors in the industry, Paul believed that the blame environmentally has just moved from the sheep and beef sector to the dairy sector with their increased population. This highlights that we may have not combatted the environmental issue, but rather diversified the problem so that it is more widespread around the different sectors.

"Diary NZ, FAR and Beef + Lamb… from the outside it looks like they're not always on the same page…I think they are each probably doing quite a lot of good… It's slightly disappointing that Dairy NZ doesn't work as much or doesn't promote the other industries."

(Interview with Paul, Beef + Lamb NZ Farmer)

4.7.3 Environmental Outlook by Farmers

All participants were very aware of the importance that sustainability and environmental practices have in the agriculture industry. Many participants highlighted water as a priority moving forward, although it was clear that there were many priorities for farmers. This includes diversifying their portfolio in terms of stock and crops, use of nitrogen and fertilisers and other initiatives. All participants saw the environment as a priority and often where they struggled was with issues that the industry and the country were also struggling with such as the environmentally safe removal of plastic waste and climate variability. Brad mentioned that generally speaking, for high country farmers, the environment has always been a large part of their operation and strategy with the environment becoming more central to the wider rural communities and regulatory people now. Participants were very clear that it was in their best interests to protect and enhance the environment, with Derek believing that it all comes down to the passion and effort of the people who are doing the work.

"The environment has always been a big part of it, but yeah it's more centre of mind now and more centre of mind now for the regulatory people as well."

(Interview with Brad, Beef + Lamb NZ Farmer)

"My job is to create passion and I will always say the environmental outcomes – you can write all your policies that you like in town but unless you've got the practitioners on board."

(Interview with Derek, Dairy NZ Farmer)

"Every farmer's intension is to make their environment sustainable, you know whichever way that comes"

(Interview with Ray, Dairy NZ Farmer)

"You can shift a lot of stuff around, like almost farm to the conditions really… We've all got to get on this bandwagon, we've got to learn how to operate properly."

(Interview with Tim, Beef + Lamb NZ Farmer)

4.8 Evaluating Data Quality

Further to the discussion on evaluating data quality in Chapter Three, the researcher discusses the credibility, transferability, dependability and confirmability of their research. In relation to credibility, Patton (1999) discusses three inquiry elements that are required. These are rigorous techniques and methods for gathering data, researcher credibility and finally the philosophical belief in the value of qualitative research. The method used in this research satisfies these inquiry elements with the use of thematic analysis which is an acceptable methodology and uses semi-structured interviews as the method of data collection. Finally, by consulting with their supervisor, this confirms credibility of the researcher and their fundamental beliefs. Having this second opinion in the research makes sure that the data and the study is credible as it removes the single minded approach of a researcher doing the study on their own.

Having transferability in the data relates to being able to share findings beyond solely just the research context. The findings relate to sustainability and a potential disconnect between farmers and the industry bodies and the general public. Due to the scope of the findings, this data can be transferred to the wider industry. A transferrable aspect is being able to use the disconnect and environmental practices to further improve this in society and within the industry. Research found that particular themes are more transferrable as they relate specifically to the concept of sustainability. Thick description was also utilised where applicable for themes that can best be discussed for further research.

Dependability is defined as "the degree to which it is possible to deal with instability/idiosyncrasy and design induced change" (Baxter & Eyles, 1997, p. 516). In doing this, themes were found through the researcher and their thoughts. As a result of this, this was observed by the supervisor to decrease or remove any concerns over interpretation of the data.

By using semi-structured interviews and thematic analysis, it allowed the data to be unrestricted by the researcher by having open questions and therefore not drawing specific themes from the collected data. To a degree, it is difficult to fully remove researcher bias (Shenton, 2004) as the interviews were designed by the researcher, but certain measures were implemented to remove bias. By having the supervisor's thoughts on the outcome of the interpretations, this provided a more well-rounded perspective of the findings which reduced data quality issues.

4.9 Chapter Summary

While conducting the interviews, it was clear that sustainability and environmental practices is at the forefront of the participants minds in the agriculture industry. The findings also suggested that there is a potential disconnect between farmers and their industry bodies but it also emerged that further to this, there was a potential disconnect between the industry sectors and the general public. This is partly due to the influence of the media and the intergenerational change that the industry has been going through. Thus, from the data collected during the interview process, sufficient evidence has been provided to give a greater understanding of sustainability and environmental practices in the agriculture industry and the different perspectives and opinions seen from the farmers' point of view.

The findings provided a strong insight into sustainability, climate change and New Zealand's position in sustainability and environmental practices in agriculture. The themes of prominent environmental strategies and priorities, relationship with industry body; public and sector disconnect and telling the farmer story are found with sub-themes found within this.

While some themes have been obtained in past research, other themes provided new insight that can be used moving forward. Distinguished findings include the importance of telling the farmer story where participants emphasised educating the public and telling the positive farmer story and intergenerational change where participants highlighted how the rural and urban relationship has deteriorated between a few generations ago to now where there is a clear disconnect and conflict present. This requires further analysis but gives the industry insight into the type of approach that can be used in the future to not only better market the industry but also put a positive light on the sustainability and environmental approaches that are already present within the different sectors. In the following Chapter Five, further discussion of these themes as well as further research and conclusion are presented.

Chapter 5: Discussion and Conclusion

5.1 Introduction

The intention of this thesis was to further investigate sustainable agriculture in the context of New Zealand, looking into the potential disconnect present between the industry bodies and the farmers. The aim was to provide not only a better understanding of the concept of sustainable agriculture in New Zealand, but also of the understanding of this area by the farmers, who are people directly involved with the environment. The previous chapters in this study have discussed the various parts of the study. This included a review of relevant literature, discussion of the methodology applied, and an overview of the findings that were collected from the interviews. The aim of this chapter is to combine all of these elements, opening with a discussion relating to the outlined research questions, new findings and the theoretical and practical implications that have resulted from this research. Themes from the interviews that were initially explained in the findings will be discussed. Following this, study limitations and future research direction will be presented which will close with the conclusion of the thesis.

5.2 Summary and Discussion of Findings

The research questions were created in response to the objective on the study, with the intention to explore and study the concept of sustainability and its relationship with the agriculture industry. The research indicates that there is support and a passion for sustainability and social responsibility in the agriculture industry. The first research question was ‘How does sustainability influence the stakeholders’ goals and planning?’ From this, six key sub-themes arose. These were primarily under the theme of environmental strategies and practices but also delved into the sub-theme of climate change influence. The findings model provides insight into the relationships and visually outlines the findings (Figure 3). These findings provide insight into a range of influential themes that were related to sustainability in agriculture in New Zealand. The primary findings relating to this are the farmers’ environmental practices and the different processes and strategies that they undertake to be more sustainable and environmentally friendly. Baumgartner (2014) and Yunlong and Smit (1994) emphasised TBL with the biophysical, socio-political and techno-economic factors. The findings suggest that all

these factors were at the centre of attention for farmers, seeing huge importance in not only the environmental importance, but also the economic importance of agriculture. The SOI model (Figure 2) introduced by Foerstl et al. (2015) is in line with the findings where farmers are making intentional changes to the way they operate, by going beyond economic returns and market opportunities to operational optimization environmentally and societal change. Macleod and Moller (2006) also highlighted the importance of profitability, with the researcher finding that participants and the industry wanted to be sustainable and environmentally friendly, they just had to be able to be profitable and operate into the future to do so. Findings were in line with Smith and McDonald (1998) where important priorities were on management practices and the different environmental and growth factors that farmers came across.

Prior research relating to the factors influencing sustainability was discussed by Smith and McDonald (1998) and Horrigan et al. (2002) who emphasised factors such as soil and water conservation as well as fertilizer, soil erosion and farmer awareness. This was in line with findings, although there was substantial emphasis on water, carbon emissions and soil in this study. This research found that past literature was primarily in line with the findings of this study, although Morton (2007) believed that industry organisations often picked up the slack from the governments, in this case there was varied response from participants relating to the industry body priorities and stance. Ingenbleek and Meulenberg (2006) and Horrigan et al. (2002) highlighted the importance of government and industry bodies working more together to adopt sustainable agriculture, something participants of this study agreed with. From the study, the researcher finds that participants were heavily focused on sustainability and trying to protect and enhance the environment. They believed that there was a greater need for industry bodies to support the farmers through increased awareness around the concept of sustainability, physical presence, and greater collaboration, action and communication with the government and the general public. Being one of the largest industries in New Zealand, it is important for economic prosperity and the survival of the population.

Findings highlighted the importance of the industry bodies in representing the farmers. Some participants felt that there needed to be greater support and collaboration among the industry bodies. The importance and relationship with industry bodies emerged as a theme as it was expressed by a large range of participants. Generally there was a high level of trust with these industry bodies but often participants felt that they were not always catering to their current needs. Some participants believed that time was a factor for them and that the industry bodies

were not tailoring their events to the younger generation, there were not enough that were close by and were often not timed adequately. Beyond this, emphasis was put on the need to centre events and initiatives around farmers rather than industry organisations as farmers felt they were more comfortable around their own. This research demonstrated that often other industry bodies and organisations had a greater presence for participants in terms of their sustainability and environmental strategies.

In the past, marketing strategies within cooperatives and agricultural organisations has been limited, with MacRae et al. (1993) finding that better strategies were needed around sustainability including through farming techniques and public awareness towards environmental and social problems. Beef + Lamb NZ has started to implement more marketing approaches through their campaigns while Dairy NZ generally allows the other industry bodies such as Fonterra to take the lead on marketing outside the farm gate. Participants really wanted the industry bodies market the industry and show the public what the farmers have been doing environmentally and ethically. The study by MacRae et al. (1993) highlights the importance of large agribusiness organisations involving themselves in the transition to sustainable agriculture as they are often heavily influential in what they do in society.

Participants appreciated how the industry bodies provided a range of resources and initiatives that can benefit the agriculture community. Giesen et al. (2009) stated that by working together and collaborating, you are far more successful than if support was provided individually. This relates to the research question; 'What sustainable initiatives and strategies do you see being done as stakeholders of these organisations? Is there a disconnect?' with participants seeing emphasis put towards the sustainability of waterways and biodiversity. The participants highlighted a range of strategies and awareness around soils, fertiliser, planting, regeneration, climate impact and an increased concern around plastic. Although participants were aware of the sustainable priorities of the industry, this research found that they were often not aware of the specific strategies and initiatives that were prioritised by the industry bodies, often preferring to get on with the job and let the industry bodies and organisations deal with the priorities in the industry. The disconnect between the farmers and the industry bodies was not seen to be as substantial, although there was a clear need for more input and inclusivity with more farmers. An increased interaction and push to get more farmers interacting and learning is needed. This relates to Bernard and Spielman (2009) where more farmer inclusivity is

needed. This research highlighted how there was not only a disconnect between farmers and the industry bodies, but also between these parties and the government and general public.

Banerjee (2001) highlighted the importance of environmental issues in organisational practice. The findings suggest that the industry bodies have had to implement more sustainability and environmental initiatives into their organisations due to increased pressure. Participants found this, with some participants believing that the industry had to play catch up and improve their initiatives and awareness in this area. This research found that sustainability was going to be a key influence going forward. From the findings, there is a need for the industry bodies to do more in promoting and encouraging sustainability in the country, with more collaboration needed together to not only improve the environment for the future, but also to reduce the disconnect. This is highlighted by Ingenbleek and Meulenberg (2006) who emphasise that these industry bodies are the ones who connect the farmers and government together, and represent the industry. It is clear from this that as they are the ones that help implement strategies and management, and help perceptions that they have huge importance.

The findings of this research suggest variability in the reactivity of the industry bodies. This highlighted not only the challenges that the industry has faced with keeping up with sustainability and environmental priorities, but also the disconnect present. This put a new facet on the disconnect within the industry; a disconnect emerged between the dairy sector and the sheep and beef sector. In general, the dairy sector were seen as ahead of the game in terms of sustainability for a number of reasons. The dairy sector has been pressured due to their proximity to the urban population and general public, the large increase in dairy farms in recent history and their environmental impact through the likes of waterways, nitrogen and carbon emissions. The findings suggest that both industries were seen as detrimental to the environment but often only the dairy sector got the blame. From the findings, some Beef + Lamb NZ farmers saw the dairy industry as ahead of the game, while others saw them as being a negative impact; Dairy NZ farmers tended to believe they did more than their bit for the environment. With the sheep and beef sector seeming to only catch up in recent years, a disconnect has been highlighted between the industries. Foerstl et al. (2015) discussed how it actually came down to the businesses and not the organisations or governments that needed to make the actual changes. In this case, the farmers have to be at the forefront to make the changes in the environment as the industry bodies are not able to keep up with all the farmers and have to prioritize.

Some participants emphasised that the agriculture industry historically had been quite reactive, with a shift over the past 10 years to a more proactive stance. This research highlights an industry wide approach and more collaboration as ideas which have huge potential. Both industries need economic advantage and want to sustainably continue for future generations. They need to put on a united from, share the same resources and fight for the same causes. Both Beef + Lamb NZ and Dairy NZ have worked towards being proactive rather than reactive. This was related to Horrigan et al. (2002) where the importance of taking a long term approach in sustainable agriculture was needed, this being something that the industry leaders need to take into account. Lee (2005) believed that more work needed to be put into agricultural inputs and their efficiencies. The findings of this research were in line with this, demonstrating that there needs to be more work and awareness into sustainable initiatives to not only improve the environment, but also to decrease the disconnect present. The research shows that this approach, which would utilize social learning processes and skill development, would actually help farmers and the industry improve their practices and their relationship. Findings suggest that there is potential to get more farmers rather than management committees involved in decision making. This is a possible opportunity to decrease the disconnect and gain a greater understanding of the present state of the industry. This was in line with Bernard and Spielman (2009). The findings show that often the sustainable and environmental centric initiatives influenced by the farmers and the industry bodies were not seen or heard by the general public. This leads onto the next key topic around the general public and media and their influence on the sector.

Further findings provided insight into communication and another disconnect within the industry. Firstly, the theme around communication and interaction with the industry body was highlighted. Participants wanted better communication with the industry bodies in ways that were more accessible and relatable to the agriculture community. The findings suggest that this is extremely important moving forward and that farmers' businesses and experiences would be improved by better communication. If industry bodies got more involved and provided the right communications and support they are likely to build a better relationship with their stakeholders. Šūmane et al. (2018) discussed the importance of informal knowledge that may be better interpreted for the general farming populous. The industry bodies could provide more informal communications, away from industry and academia to better communicate and strengthen their connection. More direct interaction and communication would likely help this, although it would be more expensive. This led to the answering of the research question; What

improvements do you see as needed to improve your experience and livelihood of your business? How can these organisations provide and market this. Initially, it is seen that better communication with farmers, tailored and timely events for farmers and support for the minority farmers were highlighted as important approaches to helping their businesses. Lee (2005) also added that more information and awareness on the key factors to sustainable agriculture adoption is key to driving success, communication and adoption of sustainable practices.

On further discussion and analysis with participants the themes of public and sector relationship and disconnect and telling of the farmer story were seen as holding high value. Surprisingly, the findings suggest a range of disconnect. The primary disconnect participants encountered was beyond the industry and sector disconnect and was actually the disconnect with the public and the media. Emphasis was put towards the generational change that has occurred over the past few generations. To improve the experience and livelihoods for the farmers, the findings suggest that the industry needs to work towards telling the farmer story and educating the wider general public which aligns with Maignan and Ferrell (2004) where the organisations and industry need to adjust to attract their stakeholders. This research highlights the drive that the bodies need to bring to improve management skillset and information (Morton, 2007; Pretty, 2008). From the researcher's perspective, this is even more important when it comes to sustainability and CSR. The industry bodies need to strategically work together to create an image that is both influential, educational and positive. Beyond this, the research highlights the importance of the industry bodies and government working together to create a New Zealand strategy for the industry and to provide greater insight into the agriculture industry to the wider society. This is following on from Bridges and Wilhelm (2008) where all NGOs and government agencies as well as individuals and businesses need to work together and get on the same page. By doing this, it is seen to help educate the public and provide a clear vision for the industry going forward, Sharma et al. (2010) highlights that often sustainable strategies were internally focused, rather than externally focused which are seen by consumers. The research puts emphasis on the need for the public to better understand the processes and practices that occur on farms and for the public to understand what New Zealand are doing compared to other nations. Participants also highlight the importance of combatting the media and their negative and degrading attitude towards the industry. To do so they believe that all stakeholders need to get behind the industry in a positive and supportive

way. This is in line with Polonsky (1995) and the ST where all individuals that influence or affect the business need to be followed up and supported.

In answering the final question; does this lead to New Zealand being a leader in sustainability in the industry? The findings suggest that New Zealand has improved in sustainability, moving from a more reactive model to a proactive model. Luo and Bhattacharya (2009) see CSR and sustainability as vital for the performance of a firm long term, with the agriculture industry being no different. Participants and the industry bodies highlighted the different practices and initiatives that they were taking part in to improve their environmental practices and sustainability, which were substantial. The findings suggest that there was a lot of work going into this area, with New Zealand in a good position where they have a smaller population and strong regulations and standards. The discussion of the themes above has proved an overview regarding the findings of this study. This has linked the findings back to the initial research questions that were first provided at the beginning of this research. The following section will discuss the theoretical and practical implications from the findings of this study.

5.3 Theoretical Implications

To the researchers knowledge there were no studies that looked directly into the potential disconnect or relationship between farmers and industry bodies in terms of sustainability in agriculture. This research is presented to fill the gap around disconnects within the agriculture industry in terms of sustainability and environmental practices. There has been a reasonable amount of research into sustainability and its definition (Bridges & Wilhelm, 2008; Gordon et al., 2011; Sharma et al., 2010). There has also been some research into sustainable agriculture, agriculture organisations and the factors that influence the environment in the agriculture sector. No study has been presented to analyse and discuss the potential disconnect present in relation to the emerging importance of sustainable agriculture.

Due to the increasing impact that agriculture systems have had on the environment (Pretty, 2008) it is no surprise that sustainability has become a key topic within the industry. Not only does this research fill a gap in literature, but it also provides an investigation into sustainability and environmental practices in specific sectors within the agriculture industry. In general, this study compliments previous findings in sustainable agriculture, it has provided similar findings

to what previous studies have observed, albeit with a new context. This study has supported studies relating to general sustainable agriculture (MacLeod & Moller, 2006; Pretty, 1995, 2008) and sustainable agriculture and the balance with profitability and TBL (MacLeod & Moller, 2006; Smith & McDonald, 1998; Yunlong & Smit, 1994). MacLeod and Moller (2006) see it as farming practices which looked after and improved the natural environment. They also highlighted the importance of food quality and safety and profitable agriculture. Smith and McDonald (1998) highlight the biophysical, economic and social factors that make up sustainable agriculture which is in line with Yunlong and Smit (1994). This research highlighted that many of the issues encountered in the industry in sustainability were directly impacting the farmers rather than the governing and industry bodies and organisations (e.g., Lee, 2005; Smith & McDonald, 1998; Yunlong & Smit, 1994; Šūmane et al., 2018) which highlights the disconnect and struggles that the farmers encounter. Supporting research was encountered by Pretty (2008) in relation to building knowledge to farmers and awareness to the public (Morton, 2007). Cooperatives and organisations in agriculture have been shown to have a substantial influence in sustainability, which was discussed by MacRae et al. (1993). This study provided insight and emphasis on the importance of communication and interaction with farmers, something that reviewed literature did not study.

The findings around the factors and priorities of sustainability and environmental practices aligned with the industry and past literature. The model provided by this study, Figure 3 and corresponding themes provide a major theoretical implication. This is the relationship between and disconnect present between farmers and the industry bodies and general public in relation to the environment. Specifically, the findings imply that there has been an intergenerational change in public relations with farmers, with the public and farmers facing a larger disconnect then previously. On top of this, the findings suggest that there is a real need to build a stronger connection with and between the industry bodies. This study highlights the addition of new findings and concepts that offer potential for future research. Most notably this includes the education of the general public and an increased awareness of the industry. Although this relationship presented itself in the findings, the aim of this research did not specifically explore this area. While this topic requires further development and understanding, it provided insight and understanding into sustainable agriculture and the disconnects in the industry.

5.4 Practical Implications

Alongside the theoretical implications, there were also practical implications that can be observed from the findings. Most significantly, the findings provide valuable insight for the industry bodies, Beef + Lamb NZ and Dairy NZ. It not only provides an opportunity to strengthen their support and interaction with farmers, but also an opportunity to improve relations with the general public, the wider industry, government and the media. In terms of marketing strategies, Belz and Peattie (2012) and MacRae et al. (1993) were two pieces of literature that emphasised the need to market sustainability, as it increases their competitive advantage and communicates what the industry and organisations are doing environmentally, portraying a more positive image to the general population. This will not only increase the positive relationship that the bodies have with their stakeholders, but it will also spread awareness around the environmental initiatives that are currently being undertaken.

From here, there are many opportunities the industry bodies can undertake to improve their image and the industry reputation. While the participants saw the industry bodies as doing a good job, there is still potential to work together to represent the industry to the general population and the media. This provides an opportunity to create a clear position and presence in the media. The release of facts and figures around environmental sustainability, the positive and real farmer story and education of the public on what goes on in important. By releasing relatable strategies and approaches there is a chance that the disconnect between the rural and urban population can be decreased. Part of the problem has been that the general public and media do not actually understand what they are seeing and what they are reporting. By providing a rebuttal and a clear approach, there is a chance to improve this. With the dairy sector more exposed than the other sectors, there is greater support needed from the wider industry. The model (Figure 3) provides insight into issues that the industry bodies and farmers are currently facing, providing valuable knowledge for the industry bodies.

The findings highlight that the industry and the farmers are fully aware of the environmental impact of the industry, and both parties have implemented and announced a range of strategies and initiatives to mitigate and eliminate the risks and environmental impacts. A challenge faced by the industry bodies that has potential is supporting the diverse range of farmers who pay levies to them. The findings provide insight into approaches that can be done to get to the farmers who are harder to connect with. Firstly, they can provide a range of events and

gatherings with farmers in a smaller area at a time that would suit their target farmers. Organising events for farmers somewhere other than their own land not only gives them relevant opportunities for learning, but also proves beneficial for their health and wellbeing. As farmers often work with other industry bodies and organisations such as Irrigation NZ, there is an opportunity for more collaboration to make this happen. In general, there is an opportunity to help the minority farmers who undertake practices and approaches that are different or not at the acceptable standard in the industry. Although this may be difficult, moving from primarily working with the innovators and early adopters may be an option. For the industry bodies, another implication moving forward is to improve communication with farmers. Making sure it is relevant, accessible and timely is something that needs to be done moving forward.

For New Zealand and its brand it is important to make sure that the environment is a priority in order for the agriculture industry and the country to be seen as sustainable. In saying this, greater support is needed by farmers if they are to continue operating the way they are operating. The government and media need greater representation from and for the agriculture industry. The general public need learn about the agriculture sector and its truths to reduce the disconnect and interact more with the farmers and the industry.

5.5 Limitations and Future Research Direction

In all research there will often be limitations that are encountered throughout the research process, these limitations may or may not influence the outcome of the study. Regarding resource constraints, Guest et al. (2006) stated that a sample size of fourteen was adequate in order to achieve data saturation. The researcher does believe that a level of saturation was achieved, and that it provided useful data in relation to sustainable agriculture. As the study is of exploratory nature, there is potential that more interviews may have provided further in-depth information. Financially, there were some constraints that limited the study. As the participants were incentivised for participating in an interview, it may have been difficult to incentivise a large sample, especially as the research travelled large distances to conduct the interviews. As this study only covered two sectors in the agriculture industry, there is a limitation in not conducting further research with different sectors and different industries. This

includes arable, horticulture, viticulture, forestry and aquaculture. The application of this study's findings in terms of sustainability across industries remains uncertain.

Although this study was conducted between the two sectors, an industry wide study would provide insight and comparisons around sustainability and environmental practices. Doing this would have required a larger sample to gain saturation of data and would have been outside the scope of this research. This study was also restricted geographically, with participants only used from the Canterbury region in New Zealand. With the researcher being from the Ashburton district, a majority of participants happened to farm here due to the connection to the district. Even within the region there are a large range of farmers and farming communities.

The scope and timeframe of the thesis and semi-structured interviews was a limitation for the research. Being done primarily over a five month period led to all thirteen interviews with eighteen participants being completed over a three week period. This may have limited the scope of the participants used throughout the Canterbury Region. In terms of participating farms, this study included a range of farm sizes and geographic locations from the Canterbury Plains to the high country. The range of participants was not seen as a limitation due to the size of the study. There were six sheep and beef farms (three of which were also arable), six dairy farms and one farm which operated both. Participants also ranged in age and included farmers who had been farming only a few years as well as those who had been farming for over three decades, with many intergenerational farmers participating. A strength to this study was having five female and thirteen males participating.

One potential participant became difficult to contact, with two unsuccessful interview dates set. As participants may have had a connection or knowledge of the researcher, they may not have felt as comfortable opening up about the industry body, although the opposite may have also occurred. Finally, Hopf (2004) states that ensuring a high level of data quality when conducting semi-structured interviews can be difficult. Even though the researcher will undertake their best effort and maintain bias-free when interpreting the data, subconscious bias will always be present because of the subjective nature of qualitative research. This is true in this research as the researcher has had prior experience living and working in the agriculture industry. They have therefore had their own thoughts, opinions and biases in regards to the industry. While attempts have been made to minimise bias when analysing the data, the only way to eliminate this bias would be to benchmark the themes by using an accompanying

researcher to assist in interview analysis. In future research this approach could be used to improve the transferability, credibility, confirmability and dependability of the collected data.

One of the goals of this research was to contribute to literature in relation to sustainability and environmental practices, and to provide an analysis of sustainability in agriculture specifically. Further to this, the intention was to provide insight into areas for future research, which is discussed below. This research was focused on sustainability and agriculture, as defined previously by Bridges and Wilhelm (2008); Gordon et al. (2011); and Sharma et al. (2010). Further research is needed to understand whether the participants interviewed possess a different view to the wider industry and academic literature. Conducting research looking into the different disconnects present within the agriculture industry would be a logical future research direction. This would provide insight into the different groups that are involved or influenced by the industry including farmers, industry bodies and organisations, the supply chain, governments, the general public and end consumers. This would help to understand to what extent the sustainability and environmental priorities influence the industry. An example would be investigating the disconnect and relationship between the general public and members of the supply chain in agriculture.

With the concept of sustainability having received a large amount of attention in past literature, there is future potential to look beyond this. Firstly, there is a need to survey and interview a greater range of farmers (size, sector, age) from different locations. As this study focused on one region in New Zealand there is potential to compare and contrast other regions and countries to understand the different environmental practices and disconnects that are present. In contrast to this, further research could be undertaken in the Canterbury region but with more farmers in more sectors. This would provide an in-depth understanding of the agriculture industry as a whole in a condensed area.

Further research lies with analysis of major themes that emerged in this study. The theme around public disconnect and intergenerational change with public highlights the need to investigate the disconnect and relationship between farmers and industry and the general public, especially with the detrimental impact that the media has on the agriculture industry. An example of this would be investigating the perceived environmental and sustainability priorities of these groups. A disconnect that requires further research is between the dairy sector and the sheep and beef sector. This study found that more collaboration is needed between

these sectors. By researching the disconnect and conflict that is currently present, there will be more insight into how the industry can move forward.

Themes around sustainability and environmental practices require little further research due to the amount already present in literature. In relation to this research, further studies could be done in sustainability and industry disconnect in different agricultural driven regions such as Australia, the United States of America and Asia as well as in different industries such as healthcare, tourism and construction.

5.6 Conclusion

The goal of this research was to investigate and develop understanding of sustainable agriculture in the context of the potential disconnect present between farmers and the industry bodies. Specifically, the study looked at how sustainability influenced farmers' goals and planning, the sustainable initiatives and strategies being implemented within the industry, improvements needed and the best approach in doing so and whether New Zealand was a leader of sustainability in agriculture. An array of major themes emerged from the findings, many of which were in support of previous research into sustainable agriculture and environmental practices, while other themes provided new insight. New findings included the host of disconnects that were present within the agriculture industry, not only between farmers and the industry bodies but also between the farmers/industry and the public and media and between the two sectors, Beef + Lamb NZ and Dairy NZ. These areas require additional investigation to establish its presence. Other new findings also include the variation in reactivity and satisfaction within the industry, and the importance of educating the public on the agricultural environment. Nevertheless, an understanding of sustainable agriculture and the farmer and industry bodies relationship and disconnect was realised, therefore a gap in existing sustainable agriculture literature has been at least somewhat filled.

Overall, this study fulfilled its intention and provided previously unknown insight into sustainable agriculture and the relationships present. It also uncovered prime areas that can be investigated in the future in the field, albeit more holistically. The exploratory nature of the research process was enabled with the use of thematic analysis, which highlighted the prevailing themes from the semi-structured interviews. The resulting data contributes to an

emerging area of the agriculture industry that has often been overlooked. It is hoped that further research will follow as a result of this study. Sustainability and sustainable agriculture holds great importance amongst societies and is vital moving forward. For future generations, this knowledge regarding sustainable agriculture may be utilised both academically and practically.

References

Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2016). Sustainability-Oriented Innovation: A Systematic Review. *International Journal of Management Reviews, 18*(2), 180-205.

Baghramian, M., & Carter, A. (2015). Relativism. In E. Zalta (Ed.), *Stanford Encyclopedia of Philosophy*.

Banerjee, S. B. (2001). Managerial Perceptions of Corporate Environmentalism: Interpretations From Industry and Strategic Implications for Organizations. *Journal of management studies, 38*(4), 489-513.

Barham, J., & Chitemi, C. (2009). Collective Action Initiatives to Improve Marketing Performance: Lessons from Farmer Groups in Tanzania. *Food Policy, 34*(1), 53-59.

Barriball, K. L., & While, A. (1994). Collecting Data Using a Semi-Structured Interview: A Discussion Paper. *Journal of Advanced Nursing, 19*(2), 328-335.

Bartlett, J., Kotrlik, J., & Higgins, C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance Journal, 19*(1), 43.

Baumgartner, R. J. (2014). Managing Corporate Sustainability and CSR: A Conceptual Framework Combining Values, Strategies and Instruments Contributing to Sustainable Development. *Corporate Social Responsibility and Environmental Management, 21*(5), 258-271.

Baxter, J., & Eyles, J. (1997). Evaluating Qualitative Research in Social Geography: Establishing 'Rigour' in Interview Analysis. *Transactions of the Institute of British Geographers, 22*(4), 505-525.

Beef + Lamb New Zealand Ltd. (2015). *2015 Sheepmeat and Beef Levy Referendum*. Retrieved from https://beeflambnz.com/sites/default/files/content-pages/levy-proposal.pdf

Beef + Lamb New Zealand Ltd. (2016). *Operational Plan 2016-17*. Retrieved from http://www.beeflambnz.com/sites/default/files/content-pages/2016-17-blnz-operational-plan.pdf

Beef + Lamb New Zealand Ltd. (2017a). *Annual Report 2016-17*. Retrieved from https://beeflambnz.com/knowledge-hub/PDF/blnz-annual-report

Beef + Lamb New Zealand Ltd. (2017b). *Farm Facts*. Retrieved from https://beeflambnz.com/sites/default/files/factsheets/pdfs/nz-farm-facts-compendium-2018.pdf

Beef + Lamb New Zealand Ltd. (2017c). *Mid-Season Update 2017-18*. Retrieved from https://beeflambnz.com/sites/default/files/data/files/B%2BLNZ%20mid%20season%20update%202017-18.pdf

Beef + Lamb New Zealand Ltd. (2017d). *Our Strategy 2017-22*. Retrieved from https://beeflambnz.com/sites/default/files/content-pages/B%2BLNZ%20Strategy.pdf

Beef + Lamb New Zealand Ltd. (2018a). Company Profile. *About Beef + Lamb NZ.* Retrieved from www.beeflambnz.com/about-blnz/company-profile

Beef + Lamb New Zealand Ltd. (2018b). *Environment Strategy Frequently Asked Questions for Staff*. Retrieved from https://beeflambnz.com/sites/default/files/levies/files/Environment-Strategy-FAQS.pdf

Beef + Lamb New Zealand Ltd. (2018c). *Environmental Strategy and Implementation Plan*. Retrieved from https://beeflambnz.com/sites/default/files/levies/files/Env-strategy-Imp-plan.pdf

Beef + Lamb New Zealand Ltd. (2018d). *Environmental Strategy and Implementation Plan 2018-2022*. Retrieved from https://beeflambnz.com/sites/default/files/levies/files/Env-strategy-Imp-plan.pdf

Beef + Lamb New Zealand Ltd. (2018e). *Proposal to Increase the Sheepmeat and Beef Levy*. Retrieved from https://beeflambnz.com/levy2018

Beef + Lamb New Zealand Ltd. (2019). Beef + Lamb New Zealand, By Farmers, For Farmers. Retrieved from https://beeflambnz.com/

Beef + Lamb New Zealand Ltd. (n.d.). *Canterbury Farm Environment Plan Guidelines*. Retrieved from https://beeflambnz.com/knowledge-hub/PDF/canterbury-fep-guidelines

Belz, F.-M., & Peattie, K. (2012). *Sustainability Marketing: A Global Perspective* (2nd ed.). Hoboken, N.J: Wiley.

Bernard, T., & Spielman, D. J. (2009). Reaching The Rural Poor through Rural Producer Organizations? A Study of Agricultural Marketing Cooperatives in Ethiopia. *Food Policy, 34*(1), 60-69.

Bosch-Badia, M. T., Montllor-Serrats, J., & Tarrazon-Rodon, M. A. (2017). Efficiency and Sustainability of CSR Projects. *Sustainability, 9*(10), 1714.

Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Braun, V., & Clarke, V. (2013). *Successful Qualitative Research: A Practical Guide for Beginners*. London: SAGE Publications.

Bridges, C. M., & Wilhelm, W. B. (2008). Going Beyond Green: The "Why and How" of Integrating Sustainability into the Marketing Curriculum. *Journal of Marketing Education, 30*(1), 33;46;-46.

Burrell, G., & Morgan, G. (1979). *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*. London: Heinemann.

Carson, D., Gilmore, A., Perry, C., & Gronhaug, K. (2001). *Qualitative Marketing Research*: SAGE Publications.

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied Business Research: Qualitative and Quantitative Methods* (Australian ed.). Milton, Qld: J. Wiley.

Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*: SAGE Publications.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. St Leonards, NSW: Allen & Unwin.

Dairy NZ. (2013a). *Making Dairy Farming Work For Everyone*. Retrieved from https://www.dairynz.co.nz/news/latest-news/new-dairy-industry-strategy-sets-ambitious-agenda/

Dairy NZ. (2013b). *Strategy for Sustainable Dairy Farming 2013-2020 - Summary of Progress*. Retrieved from https://www.dairynz.co.nz/publications/dairy-industry/

Dairy NZ. (2015). *Sustainable Dairying: Water Accord*. Retrieved from https://www.dairynz.co.nz/media/3286407/sustainable-dairying-water-accord-2015.pdf

Dairy NZ. (2017a). *Annual Report 2016/17*. Retrieved from https://www.dairynz.co.nz/media/5788170/dairynz-annual-report-2017.pdf

Dairy NZ. (2017b). *Dairy Action for Climate Change 2017-2018*. Retrieved from https://www.dairynz.co.nz/media/5787488/dairy-action-for-climate-change-2017-2018.pdf

Dairy NZ. (2017c). *Dairy Industry Strategy Refresh 2017*. Retrieved from https://www.dairytomorrow.co.nz/wp-content/uploads/2017/11/dairy-strategy-2017-a4-booklet-part-2-stragegy-refresh-2017.pdf

Dairy NZ. (2017d). *Dairy Industry Strategy Refresh 2017: The Story so Far*. Retrieved from https://www.dairytomorrow.co.nz/wp-content/uploads/2017/11/dairy-strategy-2017-a4-booklet-part-1-the-story-so-far.pdf

Dairy NZ. (2017e). How we operate. *About Us.* Retrieved from www.dairynz.co.nz/about-us/how-we-operate/

Dairy NZ. (2017f). *QuickStats about dairying - New Zealand*. Retrieved from https://www.dairynz.co.nz/media/1357994/quickstats-new-zealand.pdf

Dairy NZ. (2017g). *The Dairy Industry Strategy 2017-2025*. Retrieved from https://www.dairytomorrow.co.nz/wp-content/uploads/2017/12/dairy-strategy-2017-A4-booklet-Part3.pdf

Daly, J., Kellehear, A., & Gliksman, M. (1997). The Public Health Researcher: A Methodological Approach. In: Melbourne, Australia: Oxford University Press.

Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of Qualitative Research*. Thousand Oaks: SAGE Publications.

Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE Handbook of Qualitative Research* (4th ed.). Thousand Oaks: SAGE Publications.

Esterberg, K. G. (2002). *Qualitative methods in social research*. Boston: McGraw-Hill.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods, 5*(1), 80-92.

Fischer, E., & Qaim, M. (2012). Linking smallholders to markets: determinants and impacts of farmer collective action in Kenya. *World Development, 40*(6), 1255-1268.

Flick, U. (2004a). 3.4 Constructivism. In *A Companion to Qualitative Research* (pp. 88-94).

Flick, U. (2004b). 4.1 Design and Process in Qualitative Research. In *A Companion to Qualitative Research* (pp. 146-152). London, United Kingdom.

Flick, U. (2009). *An Introduction to Qualitative Research* (4th ed.). London; Los Angeles;: SAGE Publications.

Flick, U., Von Kardorff, E., & Steinke, I. (2004). 1. What is Qualitative Research? An Introduction to the Field. In *A Companion to Qualitative Research* (pp. 3-11).

Foerstl, K., Azadegan, A., Leppelt, T., & Hartmann, E. (2015). Drivers of Supplier Sustainability: Moving Beyond Compliance to Commitment. *Journal of Supply Chain Management, 51*(1), 67-92.

Garnett, T., Appleby, M. C., Balmford, A., Bateman, I. J., Benton, T. G., Bloomer, P., . . . Fraser, D. (2013). Sustainable Intensification in Agriculture: Premises and Policies. *Science, 341*(6141), 33-34.

Gettier, E. L. (1963). Is Justified True Belief Knowledge? *Analysis, 23*(6), 121-123.

Giesen, G., Soboh, R. A. M. E., Lansink, A. O., & van Dijk, G. (2009). Performance Measurement of the Agricultural Marketing Cooperatives: The Gap between Theory and Practice. *Review of Agricultural Economics, 31*(3), 446-469.

Given, L. M. (2008). *The Sage Encyclopedia of Qualitative Research Methods*. Los Angeles, Calif: SAGE Publications.

Gordon, R., Carrigan, M., & Hastings, G. (2011). A Framework for Sustainable Marketing. *Marketing Theory, 11*(2), 143-163.

Goulding, C. (2005). Grounded Theory, Ethnography and Phenomenology: A Comparative Analysis of Three Qualitative Strategies for Marketing Research. *European Journal of Marketing, 39*(3-4), 294-308.

Gray, D. E. (2014). *Doing Research in the Real World* (3rd ed.). London: SAGE Publications.

Guba, E. G., & Lincoln, Y. S. (1981). *Effective Evaluation: Improving the Usefulness of Evaluation Results Through Responsive and Naturalistic Approaches*: Jossey-Bass.

Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and Methodological Bases of Naturalistic Inquiry. *ECTJ, 30*(4), 233-252.

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods, 18*(1), 59-82.

Hardie, M., Shilbury, D., Ware, I., & Bozzi, C. (2010). "I Wish I Was Twenty One Now": Beyond Doping in the Australian Peloton.

Heath, M. T., Tynan, C., & Ennew, C. T. (2011). Self-gift giving: Understanding Consumers and Exploring Brand Messages. *Journal of Marketing Communications, 17*(2), 127-144.

Holden, M. T., & Lynch, P. (2004). Choosing the Appropriate Methodology: Understanding Research Philosophy. *The Marketing Review, 4*(4), 397-409.

Hopf, C. (2004). Qualitative Interviews: An Overview. *A Companion to Qualitative Research*, 203-208.

Horrigan, L., Lawrence, R. S., & Walker, P. (2002). How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture. *Environmental Health Perspectives, 110*(5), 445.

Ingenbleek, P., & Meulenberg, M. T. (2006). The Battle Between "Good" and "Better": A Strategic Marketing Perspective on Codes of Conduct for Sustainable Agriculture. *Agribusiness, 22*(4), 451-473.

Kotler, P. (2011). Reinventing Marketing to Manage the Environmental Imperative. *Journal of Marketing, 75*(4), 132-135.

Kowal, S., & O'Connell, D. C. (2004). 5.9 The Transcription of Conversations. *A Companion to*, 248.

LeCompte, M. D., & Goetz, J. P. (1982). Problems of Reliability and Validity in Ethnographic Research. *Review of Educational Research, 52*(1), 31-60.

Lee, D. R. (2005). Agricultural Sustainability and Technology Adoption: Issues and Policies for Developing Countries. *American Journal of Agricultural Economics, 87*(5), 1325-1334.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry* (Vol. 75): SAGE Publications.

Lozano, R. (2012). Towards Better Embedding Sustainability into Companies' Systems: An Analysis of Voluntary Corporate Initiatives. *Journal of Cleaner Production, 25*, 14-26.

Luo, X., & Bhattacharya, C. B. (2009). The Debate Over Doing Good: Corporate Social Performance, Strategic Marketing Levers, and Firm-Idiosyncratic Risk. *Journal of Marketing, 73*(6), 198-213.

López, M. V., Garcia, A., & Rodriguez, L. (2007). Sustainable Development and Corporate Performance: A Study Based on the Dow Jones Sustainability Index. *Journal of Business Ethics, 75*(3), 285-300.

MacLeod, C. J., & Moller, H. (2006). Intensification and Diversification of New Zealand Agriculture Since 1960: An Evaluation of Current Indicators of Land Use Change. *Agriculture, Ecosystems & Environment, 115*(1-4), 201-218.

MacRae, R., Henning, J., & Hill, S. (1993). Strategies to Overcome Barriers to the Development of Sustainable Agriculture in Canada: The Role of Agribusiness. *Journal of Agricultural and Environmental Ethics, 6*(1), 21-51.

Maignan, I., & Ferrell, O. C. (2004). Corporate Social Responsibility and Marketing: An Integrative Framework. *Journal of the Academy of Marketing Science, 32*(1), 3-19.

Malterud, K. (2001). Qualitative Research: Standards, Challenges, and Guidelines. *The Lancet, 358*(9280), 483-488.

Mckenzie-Mohr, D. (2000). New Ways to Promote Proenvironmental Behavior: Promoting Sustainable Behavior: An Introduction to Community-Based Social Marketing. *Journal of Social Issues, 56*(3), 543-554.

Merkens, H. (2004). 4.4 Selection Procedures, Sampling, Case Construction. *A Companion to Qualitative Research*.

Ministry for the Environment. (2016). Agricultural and Horticultural Land Use. *New Zealand's Environmental Reporting Series: Environmental Indications.* Retrieved from http://archive.stats.govt.nz/browse_for_stats/environment/environmental-reporting-series/environmental-indicators/Home/Land/land-use.aspx

Ministry for the Environment. (2017). Change in Livestock Numbers. *New Zealands's Environmental Reporting Series: Environmental Indicators.* Retrieved from http://archive.stats.govt.nz/browse_for_stats/environment/environmental-reporting-series/environmental-indicators/Home/Land/livestock-numbers.aspx

Mitchell, R. W., Wooliscroft, B., & Higham, J. (2010). Sustainable Market Orientation: A New Approach to Managing Marketing Strategy. *Journal of Macromarketing, 30*(2), 160-170.

Morgan, G., & Smircich, L. (1980). The Case for Qualitative Research. *The Academy of Management Review, 5*(4), 491-500.

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods, 1*(2), 13-22.

Morton, J. F. (2007). The impact of Climate Change on Smallholder and Subsistence Agriculture. *Proceedings of the National Academy of Sciences, 104*(50), 19680-19685.

Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Newbury Park, California: SAGE Publications.

Patton, M. Q. (1999). Enhancing the Quality and Credibility of Qualitative Analysis. *Health Services Research, 34*(5 Pt 2), 1189.

Polonsky, M. J. (1995). A Stakeholder Theory Approach to Designing Environmental Marketing Strategy. *Journal of Business & Industrial Marketing, 10*(3), 29-46.

Pretty, J. N. (2008). Agricultural Sustainability: Concepts, Principles and Evidence. *Philosophical Transactions of the Royal Society of London B: Biological Sciences, 363*(1491), 447-465.

Pretty, J. N. (1995). Participatory Learning for Sustainable Agriculture. *World Development, 23*(8), 1247-1263.

Punch, K. (2005). *Introduction to Social Research: Quantitative and Qualitative Approaches* (2nd ed.). London;Thousand Oaks, Calif;: SAGE Publications.

Redman, T. C. (2008). *Data Driven: Profiting From our Most Important Business Asset*: Harvard Business Press.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative Research Practice: A Guide for Social Science Students and Researchers*: SAGE Publications.

Rosenau, P. V. (1992). *Post-Modernism and the Social Sciences: Insights, Inroads, and Intrusions*. Princeton, N.J: Princeton University Press.

Sharma, A., Iyer, G. R., Mehrotra, A., & Krishnan, R. (2010). Sustainability and Business-to-Business Marketing: A Framework and Implications. *Industrial Marketing Management, 39*(2), 330-341.

Shenton, A. K. (2004). Strategies for Ensuring Trustworthiness in Qualitative Research Projects. *Education for Information, 22*(2), 63-75.

Smith, C., & McDonald, G. (1998). Assessing the Sustainability of Agriculture at the Planning Stage. *Journal of Environmental Management, 52*(1), 15-37.

Spiggle, S. (1994). Analysis and Interpretation of Qualitative Data in Consumer Research. *Journal of Consumer Research, 21*(3), 491.

Strauss, A. L., & Corbin, J. M. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, Calif: Sage Publications.

Van Cauwenbergh, N., Biala, K., Bielders, C., Brouckaert, V., Franchois, L., Cidad, V. G., . . . Reijnders, J. (2007). SAFE—A Hierarchical Framework for Assessing the Sustainability of Agricultural Systems. *Agriculture, ecosystems & environment, 120*(2-4), 229-242.

Varadarajan, R. (2010). Strategic Marketing and Marketing Strategy: Domain, Definition, Fundamental Issues and Foundational Premises. *Journal of the Academy of Marketing Science, 38*(2), 119-140.

von Wirén-Lehr, S. (2001). Sustainability in Agriculture—an Evaluation of Principal Goal-Oriented Concepts to Close the Gap Between Theory and Practice. *Agriculture, Ecosystems & Environment, 84*(2), 115-129.

Vorhies, D. W., & Morgan, N. A. (2005). Benchmarking Marketing Capabilities for Sustainable Competitive Advantage. *Journal of Marketing, 69*(1), 80-94.

Wallendorf, M., & Brucks, M. (1993). Introspection in Consumer Research: Implementation and Implications. *Journal of consumer Research, 20*(3), 339-359.

Wollni, M., & Zeller, M. (2007). Do Farmers Benefit from Participating in Specialty Markets and Cooperatives? The Case of Coffee Marketing in Costa Rica. *Agricultural Economics, 37*(2-3), 243-248.

Yunlong, C., & Smit, B. (1994). Sustainability in Agriculture: A General Review. *Agriculture, Ecosystems & Environment, 49*(3), 299-307.

Šūmane, S., Kunda, I., Knickel, K., Strauss, A., Tisenkopfs, T., Rios, I. d. I., . . . Ashkenazy, A. (2018). Local and Farmers' Knowledge Matters! How Integrating Informal and Formal Knowledge Enhances Sustainable and Resilient Agriculture. *Journal of Rural Studies, 59*, 232-241.

Appendices

Appendix 1: *Information Sheet for Interview Participants*

Information Sheet

Department: Marketing, Management & Entrepreneurship
Telephone: +64 277408597
Email: alex.holmes@pg.canterbury.ac.nz
[Date]

Sustainability and Marketing Strategies in the Agricultural Industry
Information Sheet for Farmers in Canterbury

My name is Alex Holmes and I am a Marketing Master of Commerce. I am currently completing my thesis. The purpose of my research is to find the compatibility in agriculture between the industry and farmers. I will look into the potential disconnect between the industry and farmers in relation to sustainability and strategies. My research will involve a short interview with farmers in the Canterbury region of New Zealand.

If you choose to take part in this study, your involvement in this project will be an interview for a period of 1-2 hours. This will focus on marketing strategies and initiatives within agriculture. This interview will take place at a time that suits you. This data will be recorded by me, will be kept confidential and will require a time commitment of no more than 2 hours. Audio recording will be used to allow me to have recording of the answers in this interview. You are provided with a copy of this information sheet as well as the interview after it has taken place.

As a follow-up to my research, you will be asked to read and make any changes to the interview content if you find that the information is inaccurate or untrue. I will only use information that is provided and consented by you in my research. After this, there is no further involvement needed, but you are able to contact me at any time.

In the performance of the tasks and application of the procedures there are risks of confidentially, I will make sure that your identity is kept confidential, and any information identifying you, the farmer, will be removed. I will be happy to meet in an environment and location that suits you best.

Participation is voluntary and you have the right to withdraw at any stage without penalty. If you know me, you are not obliged to take part in this research and are welcome to withdraw at any point. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove information relating to you. However, once analysis of raw data starts on 14/12/2018 it will become increasingly difficult to remove the influence of your data on the results.

If you believe other farmers you know may be interested in this study. You may provide them with my details and contact information at your discretion. This information sheet and consent forms will be provided to all participants, including those that are only interested.

The results of the project may be published, but you can be assured of the complete confidentiality of data gathered. Your identity will not be made public without your prior consent. To ensure anonymity and confidentiality, I will make sure that there is no trace of your identity in my research, with only my Supervisor and myself having knowledge of this and access to the data. Not only will this be confidential, but I will also remove any information that may lead to identification. The data will be securely stored on my locked laptop in my locked flat and will be backed up on my university hard drive that is protected by a secured login, this will only be accessed by myself and will be destroyed after 5 years, in line with University of Canterbury Guidelines. A thesis is a public document and will be available through the UC Library.

Please indicate to me on the consent form if you would like to receive a copy of the summary of results of the project.

The project is being carried out *as a requirement for a Master of Commerce in Marketing* by myself, Alex Holmes under the supervision of Paul *Ballantine*. I can be contacted at alex.holmes@pg.canterbury.ac.nz and Paul can be contacted at paul.ballantine@canterbury.ac.nz. We are more than happy to discuss any concerns you may have about participation in this project. If at any time you need any further support beyond this you can contact Healthline on 0800 611 116.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in the study, you are asked to complete the consent form and return the form to myself, Alex Holmes. We will provide you with a copy of both the consent form and information sheet if required

Appendix 2: ***Consent Form for Interview Participants***

Consent Form: Master of Commerce

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Department: Marketing, Management & Entrepreneurship
Telephone: +64 277408597
Email: alex.holmes@pg.canterbury.ac.nz

Sustainability and Marketing Strategies in the Agriculture Industry
Consent Form for farmers in Canterbury

Include a statement regarding each of the following:

- ☐ I have been given a full explanation of this project and have had the opportunity to ask questions.
- ☐ I understand what is required of me if I agree to take part in the research.
- ☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- ☐ I understand that any information or opinions I provide will be kept confidential to Alex Holmes and Paul Ballantine and that any published or reported results will not identify the participants, location, farm business or other identifying factors. I understand that a thesis is a public document and will be available through the UC Library.
- ☐ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after five years, in line with the University of Canterbury.
- ☐ I understand the risks associated with taking part and how they will be managed.
- ☐ I understand that I can contact the researcher, Alex Holmes, alex.holmes@pg.canterbury.ac.nz or supervisor *Paul Ballantine, paul.ballantine@canterbury.ac.nz* for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)
- ☐ I would like a summary of the results of the project. I will make a summary of results available for participants if they would like this.
- ☐ By signing below, I agree to participate in this research project.

Name:_____ Signed:_____ Date:_____

Email address *(for report of findings, if applicable)*:_____

[Instructions for return the consent form]

Appendix 3: *Final Interview Run Sheet*

Interview Run Sheet #4

Icebreaker: how long have you been on your farm? Farm size? Type of operation? (maybe here you could start to find out their values? Could also ask about the future of the farm, do they intend to pass it onto the next generation. It could have a bearing how important they think sustainability is)

Farm Practices

- How do you think the industry defines sustainability (environmental/economic)? What do you associate with good environmental practice and stewardship? How do you define it?
- What is your farm currently doing in sustainability and environmental strategies (e.g. water)?
- How do you work sustainability and environmental stewardship into your farming operations?
- What is your primary focus? (is this in line with industries?)
- What are you consistently able to do? What are you struggling to maintain?
- How is sustainability implemented ST and LT on your farm (methods, intensification, resource use, initiatives)? Has diversification (if applicable) helped?
- Do you currently have a farm environmental plan or similar (e.g. workplace action plan)?
- How has sustainability and the FEP influenced your farm goals and planning?
- Do you think climate change is an issue? Has it influenced business operations/development?

Farm Perceptions on goals/outcomes of B+L/DairyNZ/Industry

- What do you see as their primary focus? How does sustainability/environment fit it to it?
- Do you know the goals of the industry? Specifically, the sustainability goals of B+L/DairyNZ?
- What is your understanding on where the Levy goes? Awareness on current increase?
- Have you been consulted by B+L/DairyNZ in relation to their sustainability or environmental strategies? Or in other ways?
- Has B+L/DairyNZ put resources into sustainable projects that benefit your farm?
- If yes: what were they?
- If no: how much do you know about these resources?
- Do you see B+L/DairyNZ supporting larger capacity farms and innovative farms more?
- Do you feel you can get involved with B+L/DairyNZ sustainability action plans/strategies?
- What exists? (can list myself – Awareness of?)
- Do you see them as being reactive or proactive? Do these plans fulfil their purpose?
- What do you see as the sustainability/environmental stewardship priority of B+L/DairyNZ?
- What are they not covering or need more emphasis of? What could they improve on for you?

Farm Interactions with B+L/DairyNZ/Industry

- What support and interaction do you get from B+L/DairyNZ? (workshops, training days, environmental and land planning programmes, focus groups)
- If yes: for how long & do they fulfil your expectations?
- If no: why do you not attend? (no value, too busy, etc)
- The biggest factors? (Time, Money, Communication)
- Do you utilise the online resources the body provides such as benchmarking, employment and environmental implementation plans?
- If yes: for how long? A choice or a requirement? Where does it add value to your farm?
- If no: why not (value, too much information and paperwork, use farm advisors)?
- What sort of innovation and technology, if any, do you think B+L/DairyNZ have implemented to help farmers (e.g. resource conserving, environmentally non-degrading)?
- Are there any that you use specifically? Do you need more resources/tools/knowledge and skillset to implement?
- What level of trust do you have with B+L/DairyNZ? How could it be improved? What more could the industry do to improve this or what could be changed??
- Disjoint or collaboration potential between the different industry sectors? Marketing etc.
- Is there a disjoint with the public?
- How has it changed? Why does it continue to happen at the level it is at? Could these companies and the industry do more to help combat this? How can they market this better?
- Do you see NZ being a leader in sustainability in the industry?

Anything else you'd like to add? Any other programs in sustainability you work with?

Appendix 4: ***Human Ethics Committee Approval Letter***

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE
Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2018/41/LR

16 July 2018

Alex Holmes
Marketing
UNIVERSITY OF CANTERBURY

Dear Alex

Thank you for submitting your low risk application to the Human Ethics Committee for the research proposal titled "Sustainability and Marketing Strategies in the Agriculture Industry".

I am pleased to advise that this application has been reviewed and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 10th July 2018.

With best wishes for your project.

Yours sincerely

pp. R. Robinson

Professor Jane Maidment
Chair, Human Ethics Committee